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[H.A.S.C. No. 108–11]

Y 4.AR 5/2 A:
2003-2004/11
108-1 Hearing: The U.S. Air For

THE U.S. AIR FORCE'S AIR REFUELING TANKER REQUIREMENTS AND READINESS

HEARING

BEFORE THE

PROJECTION FORCES SUBCOMMITTEE

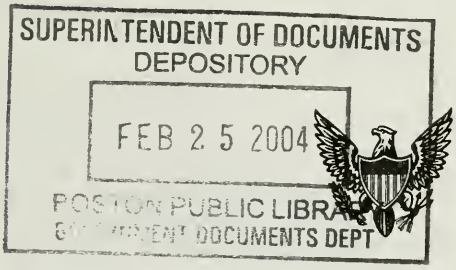
OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

HEARING HELD
JUNE 24, 2003



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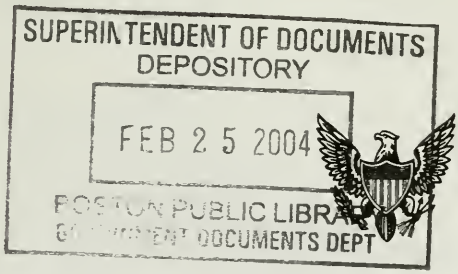

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TUESDAY, JUNE 24, 2003

THE U.S. AIR FORCE'S AIR REFUELING TANKER REQUIREMENTS AND READINESS

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THE U.S. AIR FORCE'S AIR REFUELING TANKER REQUIREMENTS AND READINESS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
PROJECTION FORCES SUBCOMMITTEE,
Washington, DC, Tuesday, June 24, 2003.

The subcommittee met, pursuant to call, at 2:05 p.m., in room 2118, Rayburn House Office Building, Hon. Roscoe Bartlett (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. ROSCOE BARTLETT, A REPRESENTATIVE FROM MARYLAND, CHAIRMAN, PROJECTION FORCES SUBCOMMITTEE

Mr. BARTLETT. The subcommittee will come to order. This afternoon, we will receive testimony from the Air Force and the General Accounting Office (GAO) on the Air Force airborne tanker fleet.

This is the first of two hearings planned on the tanker issue. Today's hearing will focus exclusively on the current Air Force KC–10 and KC–135 airborne tanker force structure, the trends and status of those aircraft and the associated budget request set forth in the President's budget for fiscal year 2004.

The second hearing will be held by the full committee and will address the details of the KC–767 lease proposal announced by the Pentagon in May. A hearing date will be established once the details of the leasing agreement have been finalized and provided to the committee.

The Department of Defense currently uses a number of aircraft for airborne tanking operations, including KC–10s, KC–135s, and KC, HC and MC–130s, as well as a number of relatively small tactical aircraft that can be configured as tankers. However, the KC–10 and KC–135E & R currently provide the majority of the Department of Defense's (DOD) air refueling requirements.

First acquired in 1957, the KC–135E current fleet of 133 aircraft has an average age of nearly 45 years. A 2002 GAO briefing indicated that the Air Force projects a lifetime KC–135 flying hour limit of 36,000 hours. With the current accumulated flying hour average less than 20,000 hours and at current use rates, these aircraft could potentially be operational for another 40 years.

The Air Force has been upgrading its KC–135Es with new engines, updated cockpit and other modifications to the KC–135R configuration at a cost of approximately $29 million per aircraft. This is expected to extend the life of the KC–135Rs to 39,000 hours.

We have three witnesses with us today to help us understand tanker requirements and the health of current tanker fleet. I wel-

come first Lieutenant General Mike Zettler, Deputy Chief of Staff for Installations and Logistics.

And may I thank you, general, for your work on Morale, Welfare and Recreation (MWR) issues, in addition to your other service to your country. Thank you, sir.

General ZETTLER. Thank you.

Mr. BARTLETT. Second, Major General Paul Essex, Director of Plans and Programs, Air Mobility Command. Finally, Mr. Neil Curtin, Director of Defense Capabilities and Management, General Accounting Office.

Before we begin, let me call on my friend, the gentleman from Mississippi, the ranking Democrat of the subcommittee, Mr. Taylor, for any remarks he would care to make.

[The prepared statement of Mr. Bartlett can be found in the Appendix on page 41.]

STATEMENT OF HON. GENE TAYLOR, A REPRESENTATIVE FROM MISSISSIPPI, RANKING MEMBER, PROJECTION FORCES SUBCOMMITTEE

Mr. TAYLOR. Thank you, Mr. Chairman. I want to thank our witnesses very much. It is obviously an extremely important subject, the replacement of the KC–135s. And with your permission, we have someone who is as fair and unbiased on this subject as humanly possible, and that is my colleague, Mr. Dicks. And I am going to yield my time to him.

Mr. BARTLETT. Mr. Dicks.

Mr. DICKS. Thank you. I want to welcome the three witnesses here today and commend them on coming before Congress to testify on one of the most pressing issues facing the United States military today—the aging of its equipment, especially aircraft and most especially the KC–135E.

General Essex, I know you struggle with this problem every day. And I also note that GAO has been out ahead of the curve in studying and identifying this problem.

In fact, I would note, the GAO issued a report in 1996 entitled, "Aging Refueling Aircraft are Costly to Maintain and Operate." This is an extremely interesting report that came out just after the Air Force decided to delay the start of its program to recapitalize the tanker fleet from 2007 to 2013, which the Air Force did in order to find the money to accelerate the replacement of the C–5As to 2007.

In fact, GAO recommended at the time that the Air Force begin studying the acquisition of a commercial derivative aircraft to carry both fuel and cargo. I must say, this is one of the most intelligent GAO reports I have ever read.

Let me just read a quote from that report, which came out seven years ago. Air Mobility Command, in its 1996 Air Mobility Master Plan, which reflects the command's future vision and detailed plans for its total force, expressed doubts that the KC–135 could continue to operate economically over the next 25 years. In other words, back in 1996, AMC was concerned that, due to corrosion, the KC–135 fleet could not be economically maintained until 2020.

This concern was restated in the 1998 Air Mobility Master Plan, which says, "Aircraft corrosion presents a significant challenge to

AMC. It is presently difficult, if not impossible, to model this major life-limiting factor over long periods of time. Technologies required to deal with corrosion have not evolved, leaving AMC with a deficiency, that of not knowing exactly how long its older aircraft will operate economically."

It goes on, "While we do not know how much corrosion will affect the service life, we are certain there will be some effect. Therefore, the corrosion factor causes us to doubt whether the KC–135 can continue to operate economically over the next 25 years."

Has the situation improved or gotten worse since the findings were first made in 1996? The evidence shows that AMC's concerns from 1996 have been amply proven.

The KC–135 fleet is deteriorating even faster than anyone anticipated. In 1996, GAO noted that the average stay for a tanker in depot in 1995, the last year before the report, was 245 days, a substantial increase at that time from the start of the decade.

However, in 2000, the average stay in depot increased to almost 400 days. GAO also noted in 1996 that the number of hours required for planned depot maintenance was 23,000 per airplane.

The Air Force indicated that this number grew to 32,000 hours. And I was told during my visit two years ago to Tinker Air Force Base (Tinker) that it has reached 36,000 hours, an increase of more than 50 percent in just over six years.

Tinker has reduced the average number of days in depot in the last year, but only by adding an additional shift and increasing overtime. The number of man-hours of depot-level repair continues to increase.

The Air Force also reports that the number of KC–135s in depot at any given time has increased from less than 50 in 1991 to more than 120 in 2000. This illustrates how deceiving mission capable rates can be.

They do not account for the very large percentage of the KC–135 fleet, now approaching 30 percent, which is sitting in depot instead of out doing its job. If this percentage continues to increase at the same rate, you could have almost 50 percent of the KC–135 fleet in depot at any given time.

Mr. Chairman, I will conclude with some questions. But I am glad we are having this hearing today. Because no one could walk out of this room with any conclusion other than the utter conviction that the KC–135s are rapidly approaching the end of their economic service life and that a replacement program must be begun as soon as possible.

Even with a program that starts today and delivers 20 aircraft per year, the Air Force will still have to fly KC–135s well past the 2020 date, beyond which AMC says they may not be sustainable. And I appreciate your kindness in letting me make this opening statement.

Thank you.

Mr. BARTLETT. Thank you very much.

We will begin with General Zettler. The floor is yours. You will be followed by General Essex and then Mr. Curtin.

STATEMENT OF LT. GEN. MICHAEL E. ZETTLER, USAF, DEPUTY CHIEF OF STAFF, INSTALLATIONS AND LOGISTICS HEADQUARTERS, USAF

General ZETTLER. Thank you, Mr. Chairman and members of the committee. It is great to be with you today.

I do believe the Air Force has a story to tell about our aging KC–135 fleet. I have submitted my formal written statement to you. And I submit that for the record.

I am willing to take your questions. But perhaps, for the committee's sake, it might be beneficial if I would use four or five story boards over here to just briefly acquaint you with situations that we encounter as we do the heavy maintenance cycle on this aircraft.

I will only take a few minutes. But the first chart is two pictures and some words. And I recognize, Mr. Chairman, that most of the members of the committee cannot see the words.

But let me summarize. The pictures are of KC–135s in a depot—periodic depot maintenance repair line.

The upper picture is some skins that have been reinstalled on the aircraft. The lower picture is the skins that have been removed and the stringers that are available and accessible to the maintenance folks, some of which are also replaced due to corrosion.

The point is, with this aircraft that was manufactured in the late 1950s and the early 1960s—hold that chart just a minute, Bob—as we manufactured the aircraft then, the technology was such that we used dissimilar metals. And we spot welded overlapping panels. In some cases, three pieces of metal were put together.

The nature of that gives rise to corrosion over the last 40 years. And these panels then have to be replaced.

For that particular piece of skin, we expend about 1,800 man-hours and about $350,000 per aircraft. Now, not every aircraft receives this level of repair when it goes through. But if you go back to about 1990, it was one out of four or five aircraft received major structural repairs.

In the year 2000 through 2003, it is each aircraft that goes through, receives two to three major structural repairs, similar levels of man-hours to be invested and similar levels of expense, in terms of actual dollars.

Chart.

Again, another area, this is in a main wheel well of the aircraft. And what I learned as the commander of—as a director of aircraft at Oklahoma City, when we first uncovered this problem, it commonly became called the "milk bottle pin."

And the "milk bottle pin" goes through that large, heavy piece of structure and is one of the primary attachment points for the wing. And we found extensive corrosion on those.

And in fact, in order to repair that, you do a large amount of aircraft disassembly. You spend about 2,500 man-hours and almost a half a million dollars. Again, another example of major structural repair.

While the airplane is in this repair line for this effort, it is on jib fixtures. And it is essentially isolated so that you cannot do a large amount of other work on it because the aircraft cannot move.

You have to stabilize it because you have major structural assemblies removed from it.

Chart.

A third example is a very, very large crack in the lower quadrant photograph there. This is a body bulkhead piece that transfers the stresses that are out on the wing into the fuselage and allows you to just distribute the stresses over a large part of the aircraft.

Another 1,000 man-hours and about $135,000 per aircraft. And again, you have the aircraft on jigs so that you cannot move it, you cannot do other work.

Chart.

And then the final one addresses specifically the KC–135E aircraft. These aircraft were manufactured early in the program. In the late 1980s and early 1990s, in our endeavor to improve the overall capability of our refueling fleet to gain more offload capability, to eliminate some of the early model engines, we went out and we purchased from retiring aircraft commercial airlines their engine struts and the pylons that the engine hangs on.

Those were 40,000 to 60,000 hour struts off the commercial fleet. We put them on those aircraft. We did some overall and repair to them. And we have maintained them since then.

To date, at this point in time, we have now seen corrosion to such an extent that we have about a $3 million per aircraft over the next several years, if we retain these aircraft.

So these four charts then lead me to a conclusion, both based on my time as a director of aircraft at Oklahoma City and then in the 1999 to 2000 timeframe as the commander of Oklahoma City, that I and the Air Force have a very aged fleet here. It has served this country well.

It is still a safe fleet because we make a tremendous amount of investment in it. That investment comes in the form of man-hours on our flight lines at the bases around the Air Force.

And it comes in a very measurable way on the depot lines that we perform at Oklahoma City and in San Antonio at the Boeing Facility and in Alabama at the Pemco facility. All three of those organizations have seen this huge rise in the depot workload.

So the conclusion is that we can maintain this airplane. But I say: at what cost?

And the cost becomes increased downtime, which in my view directly equates to money, and in actual appropriated dollars to make the investment to do the work. So we believe, as an Air Force, it is time to move on and slowly begin to recapitalize our fleet and the KC–135Es initially.

And ultimately, in the long term, Rs have to be reckoned with. And the best way to reckon with them today is to retire them.

[The prepared statement of General Zettler can be found in the Appendix on page 44.]

Mr. BARTLETT. Thank you, sir, for your statement.

General Essex.

STATEMENT OF MAJ. GEN. PAUL W. ESSEX, USAF, DIRECTOR, PLANS AND PROGRAMS HEADQUARTERS, AIR MOBILITY COMMAND

General ESSEX. Sir, I also have submitted a statement for the record. And I would only add to that a few comments. First that, on a personal side, I have been associated with KC–135s since 1974, as a second lieutenant, flying them and 3,500 hours of flying and commanding at the squadron group and wing level and now, of course, at Air Mobility Command Headquarters as the Deputy Director for Plans and Programs.

It is a great airplane. As General Zettler points out, it is a safe airplane.

However, as he also very correctly pointed out, at what cost do we keep it safe? I would say that we strongly believe at Air Mobility Command, as a user, that it is time to begin replacing these airplanes, retiring the oldest and least capable.

And I would also point out that we have something to be very proud of regarding this fleet, but especially the men and women who operate them. The maintainers and the air crews have done a magnificent job flying these airplanes and supporting operations, either here in the United States with the defense of the homeland, but also with Operation Iraqi Freedom, for example.

Since the beginning of the global war on terrorism, we have flown over 30,000 sorties on these tanker aircraft. They are an extremely important part of our national military strategy.

We are certainly not a global power without a robust tanker fleet. And so, we can fully support plans to begin improving and replacing our KC–135s.

[The prepared statement of General Essex can be found in the Appendix on page 54.]

Mr. BARTLETT. Thank you.

Mr. Curtin.

STATEMENT OF NEIL P. CURTIN, DIRECTOR OF DEFENSE CAPABILITIES AND MANAGEMENT, GAO

Mr. CURTIN. Thank you, Mr. Chairman and members of the subcommittee. I too have submitted a short statement for the record. And I will just make a few key points to summarize that statement.

Mr. BARTLETT. Let me note that all of the information submitted, without objection, will be made a part of the permanent record. Thank you.

Mr. CURTIN. Thank you.

To me, this capability for air-to-air refueling is one of the most important military advantages U.S. forces have in modern operations. And from Desert Shield, Desert Storm, right up to all the current operations overseas and here in the United States, the tanker force has been integral to successful operations.

While several aircraft are used to provide refueling, the real backbone of the tanker fleet is the Air Force KC–135. And that is really my focus in this statement.

This is a design similar to the 707 and dates from that era, actually precedes the 707. Over 700 of them were built for the Air

Force in the 1950s and through about 1966. There are 543 of them remaining in the fleet today.

And while they were originally built to refuel the strategic bombers as part of our nuclear war plan, their role has expanded over the years to provide a wide range of refueling services that make them a key to operations these days.

Make no mistake, the KC–135 fleet is old. The average age is over 42 years for the fleet. And there are some individual planes that were built in 1957 that are still in the inventory. And even the newest ones are over 35 years old now.

Despite their age, however, the aircraft have accumulated relatively low flying hours. According to an Air Force study a few years ago, the fleet has only reached a little over half of its maximum flying hours limit.

All the aircraft have been considerably upgraded and modernized over the years. And the fleet has been able to maintain reasonable levels of mission capable rates and meet the demands of the very intensive operations since September 2001.

With age, though, and these past two years of stress come increased cost to operate and support the fleet. You do not maintain older equipment without experiencing that increasing cost.

And we have seen that in many systems and certainly in aircraft in particular. As the aircraft age, keeping them at acceptable performance levels costs more and more in maintenance.

In our 1996 study of the refueling fleet, we pointed out those increasing costs back at that time and the increasing time required for all levels of maintenance of the KC–135s, especially depot maintenance. And that has continued to grow since then.

For example, the average price, as a measure of the workload at the depots, the average price that the depots charged the services for KC–135 overhauls in 1996 was about $2.5 million per plane. The fiscal year 2002 prices were over $5 million per aircraft. So a doubling of the prices charged to the Air Force units.

In a study done by the Air Force in 2001 called, "The KC–135 Economic Service Life Study," the Air Force took a hard look at the KC–135 fleet and estimated that total operation and support costs for the KC–135 fleet would increase from about $2.1 billion in the year 2001 to around $3 billion in the year 2040. In constant dollars, that is a 50 percent increase.

The Air Force has recently reported that actual 2001 costs were $2.2 billion, actually higher than in the original estimate, and that the latest projections for 2040, if the fleet was maintained that long, are $3.4 billion.

Now remember, at that point, some of these planes, if you really flew these until 2040, some of these planes would be 80 years old. And no one really has very good experience with maintaining a fleet of 80-year old aircraft.

So projecting that far in advance is obviously a little difficult. But I think there is certainly general agreement that if KC–135s are still flying in the year 2040, they are going to be very expensive to operate and maintain.

A comment on the tanker requirements that you had asked about. DOD does not have a current, validated tanker require-

ments study on which to base the size and composition of either the current fleet or a future aerial refueling fleet.

We said that in a report to the Senate Armed Services Committee last year. And I do not know of any change since then.

Back in 1996, in response to our report, DOD said the current fleet would meet requirements, "for the foreseeable future and may be sustainable for another 35 years." At that point, DOD's long-term plans projected replacement of the KC–135s beginning in the year 2013.

A DOD tanker requirements study done in the year 2000 was never formally completed or released. Our understanding is that the study showed a shortfall in tanker capability.

But it was based on the former national strategy of fighting two major theater wars. And determining tanker needs into the future really requires a detailed study based on the new strategy and on experience of recent operations.

Once you have got that valid understanding of requirements, DOD can then look at alternative ways of accomplishing that requirement and make some systematic consideration of the various approaches to modernize and recapitalize the fleet.

And with that, Mr. Chairman, I will stop. Be glad to take your questions.

[The prepared statement of Mr. Curtin can be found in the Appendix on page 62.]

Mr. BARTLETT. Thank you very much.

Let me turn to my colleague, Mr. Taylor, for your questions and comments.

Mr. TAYLOR. Thank you, Mr. Chairman.

General Zettler, just one thing in your testimony caught my attention and that was on page five, where you are talking about how you literally had to cut into the aircraft to determine corrosion. That cannot be accomplished with x-rays or some other non-intrusive means?

General ZETTLER. In some cases, it can. And in some cases, it cannot. And that is not a very good answer. But it really does depend on the nature of the piece of structure that you are looking at.

In fact, in recognition of the problem with detecting corrosion, one of the challenges that we asked an aging aircraft program office that we stood was to find innovative ways to use modern technology to isolate corrosion flaws without disassembling. And while they have made good progress and we have several pieces of equipment in the field, being used today, there are still cases where you have to peel a layer of skin back to see how far the corrosion has penetrated into the principal structure and make your analysis on repair.

In fact, General Jumper has a story that I always enjoy listening to him tell, that it was in an effort to be expeditious and to be economical, when some parts are worked on at the depot at Tinker and when he was going through a tour and he was talking to the craftsman, the craftsman explained to him that he would get to this area and then he would grind, grind and grind to see if he could remove the corrosion. And then he would measure.

And some of the time, he would get it eliminated and then be able to proceed. In many of the cases, though, he would grind and grind and grind until there was not enough perimetal left. And then they had to go in and replace that piece.

And the chief's words to me were, "Why do we not just replace the piece?" Well, the piece was a several tens of thousands of dollars piece and several thousands of man-hours.

So if you can eliminate the corrosion, then in fact you can save some money. So they take that economical approach.

I relate it to my 1959 Chevy that I had when I was growing up in Cincinnati and the rocker panels down front, which is where you get the corrosion. And you would grind away and grind away. And then when you would finally get through to the metal, you would find out, "Oh, my goodness, look at how much corrosion I really have there."

But in summary of that answer, then, is that there are pieces of equipment that are out there. Many of them are brought in from similar equipment in the medical field. But there is always the time where you do have to go in and open it up to really make your determination of how much work you have to do.

Mr. TAYLOR. In your testimony, you do not outline any alternatives. I realize it was not the purpose of this hearing. But I do not want to miss this opportunity to hear if you are looking at any alternatives and what they would be.

General ZETTLER. And I am not sure that I understand the nature of the question.

Mr. TAYLOR. To the aging aircraft.

General ZETTLER. Well, at some point in time—and we in the Air Force believe that that time is now—we need to replace this aircraft, which is our oldest aircraft. And whether you do that under terms and conditions that the department is working now, known as lease, or you do it as a new procurement, is the sooner we can replace these, the greater return and operational availability we will have for the fleet.

Mr. TAYLOR. What would be your timeline for trying to do that? Is it going to be in next year's Presidential request?

General ZETTLER. It is likely to appear in the 2005 request that we are working. And as you know, there is a lot of moving pieces right now, at the beginning, the process of getting the approval for the process, as we work the final days with you all on the 2004 request.

Mr. TAYLOR. Mr. Chairman, where am I on my time?

Mr. Chairman, I will yield back the balance of my time.

Mr. BARTLETT. Mr. Kline.

Mr. KLINE. Thank you, Mr. Chairman.

Thank you gentlemen for coming in today. I do not think that I need to be persuaded that we have to replace the fleet. That is a very old airplane.

And I have looked under the skins of a number of aircraft in my earlier life. And finding corrosion on the stringers between dissimilar metals is an unsettling thing.

And it seems that the proposal here is to replace this with a different aircraft which, as I understand in looking at the testimony, is more efficient in terms of what it can carry, the fuel it burns,

how noisy it is and all of those things. I am not sure if this is a follow-up to Mr. Taylor's question. But is this the only alternative that is on the table? Whether we lease or buy, is the 767, that is the determination that has been made?

General ESSEX. Well, as General Zettler pointed out, as far as the lease program, that is something that is being worked through The Office of the Secretary of Defense (OSD). And a report will be presented over here.

But if we do not proceed on down that path, then our next step would be to fall back to a buy, which would be later. But basically, what we are proposing here in the fiscal year 2004 budget is to begin the retirement of the oldest and least capable of our KC–135Es, those to which we feel it is pretty much just putting good money against bad because of the problems they have.

And because of the fact that we really, as he pointed out, our costs to repair these airplanes have gone up much more than we expected. So we did not have budgeted for all that——

Mr. KLINE. Right.

General ESSEX [continuing]. To do everything we need to do, by the tune of about half. So by retiring the oldest ones, we can actually apply the resources to keeping the rest of the fleet more healthy. And in fact, in my testimony, I mention that one of the things we are doing is using the air crews and the maintainers from those airplanes that we are retiring and applying them across the fleet to increase the actual operational capability of the fleet and make better use of the remaining airplanes.

Mr. KLINE. That is not then lowering your actual maintenance man-hours per flight hour. It is just giving you resources available to work on different aircraft. Is that——

General ESSEX. Yes, sir. It will allow us to get better use out of the airplanes that remain. And the airplanes are still old.

Mr. KLINE. So you still have a high maintenance man-hour per flight hour, no matter which way you do it.

General ZETTLER. We just are taking the manpower and applying it to the remaining fleet, which will allow you to increase the sortie rate on the remaining fleet.

Mr. KLINE. Okay. Thank you, Mr. Chairman. I yield back.

Mr. BARTLETT. Thank you.

Mr. Alexander.

Mr. Saxton.

Mr. SAXTON. Mr. Chairman, thank you. And welcome. Good to see you here. Thank you for coming in.

This reminds me of two previous sets of circumstances. We sat here in this room. And oh back, I cannot remember when it was, you folks were probably involved in it, when it was proposed to replace the C–141 with the C–17. Boy, I remember all these same questions.

And being from up at McGuire Air Force Base territory, I remember the thoughts traveling through my mind of losing those C–141s that we were all so fond of and talking about the same issues of cost and efficiency. And in the case of the C–141 and the C–17, throughput, crew size, cost of maintenance and all those things. So I suspect that we are running many of the same issues through the grinder here again today.

Let me ask some questions about the efficiency. In the GAO report, for example, there is a little chart there on mission capable rate. And the aircraft—very clearly—the aircraft that you are proposing to retire are obviously the least efficient.

They are the old E models that are in the neighborhood of 70 to 76 percent mission capable. While the modernized versions, the R models that are flown by the active force, are 85 percent mission capable.

And the R models that are in the Reserve and the Guard are 78 percent capable, according to this GAO report. So I guess my question would be—well, first, let me ask: what is the mission capable rate of the KC–10? Does anyone have that information?

General ZETTLER. I do have that. Just one second.

Mr. CURTIN. I think in the statement that I submitted for the record, congressman, the rate that I quote was 81.2 percent for the KC–10s for a comparable period, which was October 2001 through March 2002. I do not know what the current is.

General ZETTLER. That is very close. My numbers are 80.7 for the first 6 months of fiscal year 2002 and then 79 percent on the 135-R combined fleets.

Mr. SAXTON. So very clearly, the mission capable rate of the older, less efficient E models is significantly less than both the KC–10 and for the KC–135s that have been modernized.

General ZETTLER. Yes, sir. And there are some other pieces of information though on the KC–10 that I would share with you, if you are willing, right now. The utilization rate on the KC–10 is about 21 hours a month. And the KC–135 is about ten hours a month.

And the maintenance man-hours per flying hour on the KC–10 is just under four; whereas on the 135, it is almost nine. So there is some dramatic differences in that 20-year difference in age in the platforms there.

Mr. SAXTON. I guess I would also just like to know what it might be anticipated that the mission capable rate of the 767 might be expected to be.

General ZETTLER. Well, I think that we are talking in rates that are significantly higher than either the KC–10 or the KC–135. I would expect that, given the type of missions that it will fly and the availability of spare parts as we make those arrangements to support it would put it up in the range of the C–17, which is better than 85 percent, the 85 to 90 percent range.

Mr. SAXTON. So I guess the tradeoff here then is: do you spend money to maintain an older, less efficient aircraft? Or do you shift those dollars into a newer, more modern, more capable platform?

General ZETTLER. I think that is a fair analysis of the tradeoffs that we have. And in line with Congressman Taylor's questioning, that is the process the department is going through right now.

We are preparing a budget amendment for fiscal year 2004. And we are using sources of funds from retiring some of these aircraft in the future years to support the investment in the new alternative 767 program.

Mr. SAXTON. Is the payload of the 767 larger, heavier than the——

General ESSEX. Yes, sir. It is significantly more. Whereas the KC–135 can haul six pallets, a KC–767 can haul 19 pallets or it can haul about 200 passengers, depending on its configuration.

Mr. DICKS. Will the gentleman yield?

Mr. SAXTON. Be happy to.

Mr. DICKS. This is an important point. This airplane not only does the refueling, but it carries cargo and passengers.

Mr. SAXTON. Thank you. And can you just, General Zettler, can you explain the rationale for the lease program, rather than an outright buy?

General ZETTLER. Well, I will be happy to have one of our experts come over and speak with you, Mr. Congressman, on that. I am not the expert on the leasing program.

I take care of the aging. And I leave the leasing business rules to others.

Mr. DICKS. Will the gentleman yield?

Mr. SAXTON. Sure. But let me pose a question. Then I will be happy to yield. The problem that we are trying to overcome is how to do business, given our configuration of how we get to the fight and how we manage to keep fuel and tactical aircraft while we are at the fight.

The concept of an air bridge has come about in the last decade or so, from my understanding, because we have brought so many forces home from forward-deployed bases, including forward-deployed bases where we could land and refuel and take off. And so we came up with the concept of taking off from my air base—McGuire Air Force Base—or Dover or Charleston and getting up in the air, taking out some fuel part way over, maybe twice, and not having to stop.

And so now, it appears that we just—what we are trying to do is to maintain the capability of maintaining that air bridge and, at the same time, maintaining the capability of getting our tactical platforms in and out of the fight in the theater. And it would seem to me that an airplane with a higher payload and more efficiency would be something that we might want to have, in order to carry out that mission.

Now I will be happy to yield, if the gentleman——

Mr. DICKS. I just, on your other point, the rationale behind the legislation that created this possible program was that we did not have the money in procurement. In other words, General Myers testifies every year we are $30 billion to $40 billion short in procurement.

Chairman Hunter talks about that all the time. Well, that means the Air Force has about $15 billion less for procurement.

So the only way we could do this was to come up with a lease, which would mean that they would not have to spend any money until they got the airplanes in 2006. And that would come—this funding would come out of the Air Force budget to fund it in 2006.

But Boeing and the entity that does the lease would finance the airplanes. And you would not have to do any Research and Development (R&D). It is an off-the-shelf airplane. It has to be modified and put into a tanker.

But you do not start paying the lease payments until 2006. So it was a more efficient way to fund the program.

The other thing that is important, if we started a procurement program today, in 2009, we would have one airplane. By doing it with the lease, we will have 67 airplanes in 2009. That is dramatically different.

That is why we are doing it this way. It is the only way we could do it in the Air Force budget as it exists today.

Mr. SAXTON. I thank the gentleman. And I will yield back after just saying that—and I agree with the gentleman. And I guess my last question was geared to say: how do you get the most lift in terms of refueling capacity, the quickest to maintain the air bridge and the tactical part of the refueling mission? And obviously, the gentleman has answered that question.

And I yield the balance of my time.

Mr. BARTLETT. Thank you very much. I might note that we are going to have a full committee hearing that is focused specifically on the purchase-lease questions. And although we can discuss them here, there will be a larger group of witnesses then who have prepared specifically to discuss those issues.

Mr. Marshall.

Mr. MARSHALL. Thank you, Mr. Chairman.

Last week, I was briefed on a proposed road map for the rebasing, I guess, of all the groups and wings that deal with air refueling. And it is the first I had been exposed to the plan.

In questions, I understood the answer to be—my questions, the answer to be to those questions—that the decision to move to the new platform is separate and distinct from the road map, that the road map, obviously in moving to a new platform, you are adding planes. And you have to figure out what you are going to do be doing with the old planes.

And this generally presented an opportunity to rethink where everything should be based, organized, et cetera. Could you comment on that response, as I understood the response, to the questions that I had last week?

General ESSEX. Sir, I am not absolutely certain of what all your questions were last week. But I was somewhat involved with the road map briefings. I was involved with one of them up here and I am familiar with the briefing itself.

I would probably characterize the purpose of the road map as a little different from what I think I just heard you say, and that is that I believe that the road map brief shows the proposed preferred way ahead for the Air Force, including the replacement of the 135Es with the leased airplane as we bring those on. And it shows where the airplanes would be based—our preference for that at least—and after the Es are retired, where the Rs, the KC–135Rs, would be moved and shuffled around to keep those units up.

And of course, we do not lose any flags in this move. And the squadron of an Air Reserve component unit would be an eight primary aircraft authorized KC–135R equipped unit.

But it did—the package, the plan—showed the preference for how we will base our tankers, including if we get the—it includes the leased airplanes.

Mr. MARSHALL. Does the Air Force have in mind a process that Congress will be involved in, in reviewing the road map? I recog-

nize the road map has the Air Force's preference, at least its initial take, its initial cut, on this particular issue.

But do you contemplate that there will be a process? Obviously, there are going to be some appropriations that are involved, I would assume, and some budgeting that is involved, I would assume, in trying to actually execute the plan that is laid out, the preferred plan that is laid out by the road map.

Do you have in mind a process?

General ESSEX. I believe the plan was and the intent of the road map briefings was to actually lay out for Congress to consider how we would see our basing for the future. And I do not see any follow-on planned, unless of course there are requests for more discussion.

General ZETTLER. Let me elaborate a little bit. As we worked the bed down for the tanker road map, it was our intent as an Air Force to come over and fully lay that out for the members of the Congress and share with you where we were going, what the alignments would be, what the manpower ups and downs would be, both for the active and the Guard and the Reserve forces.

And then as that goes forward and when we come over with the budget amendment for the leasing arrangement, that will tie together some of those pieces. And as we bring over the 2005 program then in February, that will also lay out those pieces.

So I think it is a collaborative effort to show you what our intent is as we move from a 135, KC–10-based tanker force to a 135, 767, KC–10-based tanker force.

Mr. MARSHALL. Mr. Chairman, I would simply suggest that perhaps we have some hearings not just on the lease that is proposed, but perhaps on the road map itself. That is all I have, Mr. Chairman.

Mr. BARTLETT. Thank you.

Mr. Taylor.

Mr. TAYLOR. Yes, sir. I would like to get Mr. Curtin and General Essex to—I have a comparative study here of your two testimonies. And they do not match up. And I would like to give you an opportunity to tell me why they do not.

Going to the GAO study on page four, about halfway through, DOD does not have a current validated study on which to base the size and composition of either the current fleet or a future aerial refueling force. An Air Force study called the Tanker Requirements Study, TRS–05, was conducted in 2000, but was never formally completed, nor were its preliminary results released.

Drafts of the study identified a shortfall in tanker capability. But the study was based on an old strategy, et cetera.

Looking at pages three, four, five of your testimony, General Essex, would lead one to believe that the study was done and was released. And so again, I am curious why two diametrically opposed opinions are being articulated.

General ESSEX. Well, I would say that I think we had a failure to communicate between Mr. Curtin and the Air Force somehow on that. I believe that the TRS–05 was, in fact released to Congress in the fall of 2001. And I believe that—Mr. Curtin and I were over writing notes to each other because we noticed that discrepancy ourselves.

And at some point, I believe he said he asked to see it and was given the response that it was not finished. However, that happened, that was incorrect.

It was done a long time ago. And I believe it has been actually submitted to Congress. And we will certainly work with the GAO to provide them that study.

Mr. CURTIN. Our understanding of it is we were shown some briefing slides and briefed on the study. And I think that is about the extent of how it was presented to Congress. That is our understanding. There is no study, no piece of paper that says, "This is TRS–05," sent to the Congress, as far as we are aware.

Mr. BARTLETT. If the gentleman would yield? It is my understanding that what was released was a three-page summary. And I guess there is a difference of definition here of what constitutes a study and what constitutes a release.

What was released, I think, to GAO and the Congress was a three-page perfunctory summary. And the study had to be longer than three pages, I would think, would it not?

General ESSEX. Absolutely.

Mr. BARTLETT. Is that study going to be released?

General ESSEX. I can only say that we will get back and see what the status of that is. I really was under the impression that it had been. But we will——

Mr. BARTLETT. It is our understanding that all that was released was a three-page summary. Is that your understanding, Mr. Curtin?

Mr. CURTIN. A few slides, whether it is three or not. I do not know how many pages it was. But it was a brief set of briefing slides, not what we would look to for a typical detailed study.

And it may depend on——

Mr. BARTLETT. Thank you.

Mr. Taylor.

Mr. CURTIN [continuing]. I hated to say it, but it may depend on what your definition of a study is, I guess.

General ESSEX. It may. I am told that it was significantly more than three pages. A significant briefing with a lot of information was released. So we will check into it and get back.

Mr. BARTLETT. Well, neither GAO nor our staff has seen that. So it would be nice, if it got lost in the mail, if you could send another copy.

General ESSEX. Yes, sir.

Mr. TAYLOR. General, to that point, as you know, aerial refueling is one of many of the obligations of this subcommittee. And we are given a fairly limited, fairly small limited amount of money to take care of everything from naval force projection to aerial refueling. We have a dwindling American fleet of both, of Navy ships and aircraft.

As we are wrestling with trying to prioritize the spending, I would think it would behoove the Air Force to get that study to us and tell us where you think we need to be. Because if we do not know that, we certainly are not going to know when we get there.

General ESSEX. Absolutely, sir. And I would also say that we believe that it is time to do a new tanker requirements study, that in fact the TRS–05 was based on the same underlying basis of the

Mobility Requirements Study 05 and that, in fact, it is about time to start a new tanker requirements study.

But we will definitely get with you all.

Mr. DICKS. If the gentleman would yield?

Mr. TAYLOR. Yes, sir.

Mr. DICKS. I think, didn't Secretary Aldridge, in his announcement, task the Air Force to do a plan to replace the tankers?

General ESSEX. Yes, sir.

Mr. DICKS. I think he did. So I think it is timely.

General ESSEX. That was in his 23rd May announcement, yes.

Mr. TAYLOR. I am curious, Mr. Curtin, to what extent did you try to get that study? I mean, was it a full-blown effort? Was it one call or one memo to the Air Force?

I am curious because it is impossible for you to do your job if you were not given that information. I am not faulting you. I am just noticing the obviously completely opposite accounts in the testimony I am getting today.

Mr. CURTIN. It was a key document for us. And we have been doing some work for the Readiness Subcommittee on this broader issue of tanker requirements, going back about 18 months or so.

And we have been asking for that ever since then. That, to us, was the starting point. And that is typically what we would look at in requirements, is: what is the current Air Force position, the current DOD position?

So we have been asking regularly. And we were aware of the briefing slides. But we could not get anything behind it.

Mr. TAYLOR. Well, general, not to belabor the point. But I think you know you have a receptive audience here to the need to do something.

General ESSEX. Absolutely.

Mr. TAYLOR. But I think the point I am trying to make is we need to know what your target is. What is it that we are trying to accomplish?

How many planes do we need to replace and with what kind of capability? So that we have some idea as a Congress of knowing what it is going to cost us to get there and set up a timeline to get there.

Thank you, Mr. Chairman.

Mr. BARTLETT. Thank you.

Mr. Dicks, do you have additional comments or questions?

Mr. DICKS. I was just looking, I think it was in General Zettler's study, tell us about some of these problems. You talked about a ten year modification upgrading the aircraft's Compass, Radar and GPS. And that still is not completely done?

General ZETTLER. No, sir. That was a modification known as Pacer CRAG, compass, radios and GPS, CRAG. It installed essentially a largely glass cockpit into the KC–135.

It started in the—I guess—in the conceptual phase was in the late 1980s, began installations in the early 1990s and completed installation in about 2001, maybe early 2002. But we have been done with that one for about a year now.

And all the fleet, the Rs and the Es, have been upgraded with that modification.

Mr. DICKS. Good. What about the stabilizer trim actuator? This is one of the points that I would like to make.

I worry about a block failure of these airplanes, where something would happen traumatically and we would not be able to use these things. Now here is one possibility.

A stabilizer trim actuator, in your testimony, it says approximately 40 percent of the fleet were grounded from September 1999 to February 2000 until overhauled actuators were installed. Could you tell us a little bit more about that?

General ZETTLER. I can. In fact, I was the commander at Oklahoma City that, with the concurrence of the Air Mobility Command commander, stood down that tanker fleet to do that work.

Approximately a year before that, we had had a KC–135E crash and loss of the crew on takeoff at Geilenkirchen in the Netherlands. And the accident report was very thorough and generally found that there had been what was believed to be an electrical problem in the stab trim actuator system that caused a runaway trim. And the aircraft, on a touch and go, stalled out and impacted the ground. Tragic loss.

As the engineering community worked their way through that and outlined several recommendations for the corrective action across the entire fleet, we began to look at other associated areas with the stabilator trim system. And we saw some things that we were not totally comfortable with in the stab trim actuator, which is in the empennage of the aircraft and makes minor adjustments to the pitch attitude of the aircraft.

As we worked our way through that, we then had the Alaskan Airline accident off the coast of Alaska, which was ultimately attributed to maintenance practices. But as we began to look at ours and our maintenance practices there, we thought we were pretty good.

But we found more wear than we were comfortable with in the gear teeth and in the metal block that the gear teeth were built out of in a large portion of our fleet, such that we decided that the risk was such that we had to go in there and make manual inspections of the gear teeth and the actuators and the drive mechanisms.

And we, in fact, found a large number of them were beyond the times that we wanted to continue to fly. Forty percent was the number about, as I remember it. And my testimony cites that.

And so we stood down that fleet until we could stand up a manufacturing process to build these new pieces of equipment which, if I were to just use my hands, were about that big and spherical with gear teeth in them. And then we put together a modification rebuild program to build new.

We used the manufacturing capabilities at the Air Logistics Centers. We used a firm in Tulsa, Oklahoma to do the plating of those.

We used another location to do the heat treatment of those. And then we used Ogden Air Logistics Center to rebuild the actuators.

But at the time, our mission capable rate for tanker availability plummeted down into the fifties. Our fleet was severely impacted. And I suppose the question one would always say is, "Well, if you had had a war, would you have gone to war then?"

And I would always say, "Well, how big is the war? And how bad do we really need them? Let's stretch out the rest of the fleet, do all the cannibalizations and try to maximize it and then see where we are at."Because I, as the commander, was not comfortable that we had an airworthy system at that point in time.

Mr. DICKS. Thank you. Let me ask you this. On the fuel system, this sounds like another potential disaster waiting to happen.

The fuel system is the largest driver of non-mission capable aircraft in recent years. Fuel tank and fuel bladder leaks continually plague the warfighter.

Between January 1998 and 2002, the fleet averaged 120 fuel leak repairs per month, utilizing 3,245 man-hours per month, at a cost of $41 million. Can you tell us more about this?

I mean, is this another serious problem waiting to happen?

General ZETTLER. I would say all of our fleets will have, from time to time, minor fuel leaks. But we indeed have a very large aircraft here that has both an integral tank system on it and it has bladder tanks. And we routinely have more fuel leaks than we would like to have.

Our maintainers are superb out in the field. And they are experts at detecting first and correcting while small.

But the numbers that we cited in our testimony are factual. And they take up an inordinate amount of time to maintain the worthiness of the fleet.

So the mechanics identify it. Then they are forced to, if it is an integral tank, they usually use an injection system to inject sealant into the tracks and the channels to try to stop it.

If that does not work, then they take it into the fuel barn and open up the cell and then do scraping of old sealant out and reseal it. Or if it is a bladder tank, then they are forced to take it into the fuel barn as a general rule, de-panel it, much like taking the bladder out of a football, if you will. I think we have all probably done that.

You unseam it. You pull the bladder out. You put a new bladder in and recharge it.

Those are tremendously high man-hour tasks. And they require special fuel cell repair facilities. You do not just take an airplane and take it on the ramp and open it up in the fuel cells.

You go in and do that work in a special facility that is ventilated. It is electrostatic discharge protected. And you have breathing apparatus for the people that have to go into the cells.

And so you get the drift of the—when you start talking fuel cell maintenance, you are talking big, heavy maintenance. It is done at the base level, but it is aircraft down time.

And then the third problem that we have across the fleet is over the years, in the early days when this airplane was made, there was a corrosion preventative applied to the inside of the fuel cells. And it is like—it would be like putting cellophane on the wall of the fuel cells.

And over time, with the constant refueling and loss of the fuel as it is used and perhaps—perhaps—changing fuel types from JP–4 to JP–8 in the very late 1990s, we have seen that sealant corrosion preventative start to peel off. And so every 60 hours, the me-

chanics in the field open up all the fuel filters and inspect them. If there is any of that in them, then they do a purge.

If it is still there, they have to go inside the tanks and find where it is peeling off at. And they remove it by scuff sanding, if you will, and doing that.

So yeah, these airplanes do have a lot of fuel cell maintenance on them. They do constitute a large portion of the down time. And they do drive a man-hour expense that I would not anticipate having on a new airplane.

Mr. DICKS. Now if we take out the older KC–135Es and send them to the bone yard, in your statement, how much money are we going to save over the next years?

General ZETTLER. Well, I just do not know the exact answer to that. I would need to go back and run the——

Mr. DICKS. Well, it says here in your statement, a review of 2001 KC–135 ESLS estimates that a means of projecting future costs determined that retiring 68 KC–135Es instead of starting retirement in 2009, but do it now, as was originally planned, will result in a $4.5 billion cost savings between now and fiscal year 2017.

General ZETTLER. That is a great statement.

Mr. DICKS. I know. You made it. [Laughter.]

I read it. So we are talking about doing more than 68, are we not? Aren't we talking about 135 of these older airplanes?

General ESSEX. There are 133 total that will be—in the E fleet. In the fiscal year 2004 PB, of course, we are recommending retiring 68, seven of which become backup aircraft in inventory.

Mr. DICKS. And no matter what we do, if we start now with a program to replace with the 767, I might point out, Mr. Chairman, this plane—we may not have this plane around for that long. So we have to make a decision.

This is the right plane to do the tanker with because we have already got the Italians and the Japanese doing four each. So we get rid of a lot of cost because of that.

And you know, this plane may not be around commercially. So it is kind of like either we are going to do this now and start this program or we are going to have to find another airplane.

So that is my concern, that we have to get on with this and start something even if that—in your statement again, sir, you say that we are still going to have a lot of these KC–135Rs around for a long, long period of time. It will take 30 to 40 years of sustained effort to replace a significant part of the existing fleet. So if we do not get started, we are going to be flying these planes, these old planes, for a long, long time.

Thank you for your very generous yielding.

Mr. BARTLETT. Thank you.

Mr. Saxton has a question.

Mr. SAXTON. General, it should be of no surprise to any of us that when airplanes get older, following along the line of questioning of my friend, Mr. Dicks, when airplanes get older, the chances of failure across the fleet in some component like you discussed, the chances of that happening increases.

General ZETTLER. Certainly.

Mr. SAXTON. You were undoubtedly in the Air Force in the—I know you were in the Air Force, I want to say early 1990s, but it

may have been the late 1980s—when another fleet of airplanes developed a similar problem involving the C–141 center wing. Would you describe what happened with the center wing of that airplane?

General ZETTLER. I think——

General ESSEX. Well, I can talk about that a little bit. We had a situation in those wings where there were holes between the compartments from fuel—the weep holes, as they were called. And there was a problem with corrosion cracking that once we started finding them, we found it was a block problem, a fleet-wide problem.

And in fact, it caused us to have to ground the C–141 fleet. I was the deputy director of operations at Air Mobility Command when we made that decision. I remember that night very well.

And it had a huge impact on our ability as an Air Mobility Command to do our job. It was virtually catastrophic. We were afraid that it was even worse than it turned out to be.

But it was a significant amount of work, significant amount of cost and a great reduction in our capability until we were able to make the necessary repairs. And of course, that did lead to the final decision that we had to accelerate the retirement of 141s.

Mr. SAXTON. Do you remember what year that was, just out of curiosity?

General ESSEX. That would have been about 1994, I want to say.

General ZETTLER. General Fogelman was the commander of Mobility Command at the time, I believe. So 1993, 1994 timeframe.

Mr. SAXTON. Those airplanes were working on 30 years of age at that point. Is that about right?

General ESSEX. Yes, sir.

Mr. SAXTON. And with regard to another fleet of airplanes, the C–5 fleet, the earlier models are today experiencing similar problems, although maybe not of the block nature, but of certainly a maintenance nature. Is that correct?

General ESSEX. I think that is fair to say that.

Mr. SAXTON. Is there a block problem with the C–5?

General ZETTLER. It really is characterized more as a situation between two models, the A model and the B model. I have not heard it characterized in the context of a block model.

We have plans to work the avionics modernization on the C–5. And those are going very well.

We have longer-range plans for the re-engining and modernization program of the remainder. And we have to make assessments on the C–5A and the C–5B. And those are long-term studies that we need to continue to proceed with.

The secretary has asked us to work. And we are at the 85 percent solution set, a fleet viability process to make assessments of all of our fleet.

And we have lined up the C–5 as the first one, late this fall, to go make a real assessment of its air worthiness, if you will, or its air viability. And then we probably will follow on behind that with- we have three other candidates that we are going to take hard looks at.

Those would be the C–130E models, the F–15s, particularly the ones that are based out in the Pacific at Kadena and then the A–

10. And we are not sure just yet which one of those we are going to take a hard look at.

But we are putting together a team of senior degreed engineers to help us grapple with the aging fleet issues that we have across our fighter, our bomber, our tanker and our Intelligence, Surveillance and Recconnaissance (ISR) platforms.

General ESSEX. Sir, if I could add just a bit to that? He mentioned, of course, that we have two improvement programs on the C–5, the avionics modernization program first and then eventually the re-enging and reliability enhancement program (RARP).

And yet this Fleet Viability Board is so important for us because it will assess all the factors affecting the life of an airplane. If we base future decisions on the C–5—or any other airplane—just on how well a particular modification program performs, such as the RARP program, how well it does in operational tests, that will tell us if new engines do, in fact, perform better on an old airplane.

Well, yes, they will. I can tell you that right now.

It will not tell you everything you need to know to make fleet viability decisions, which is the purpose of the Fleet Viability Board, which must take place as soon as we can.

Mr. DICKS. Will the gentleman yield just for a brief moment?

Mr. SAXTON. Be happy to.

Mr. DICKS. I have the C–141 base at McChord. And no one predicted—did they?—that this could happen, that this problem could happen. It just happened and was discovered.

I mean, this is the same thing I worry about on these tankers. I mean, we are talking about planes that were all built between 1957 and 1964. I mean, what happens if we had a block failure and all of a sudden, we did not have tankers?

Every mission, I believe, that flew into Afghanistan and into Iraq had to be refueled multiple times. And all of a sudden, we cannot do what we have to do to remain the world's leading superpower. So this is, in my judgment, a very serious thing. And it seems to me, at least, that it is now time to start getting a new aircraft and move this thing forward and start replacing these older planes. I do not think we should assume, take the risk that we could, all of a sudden, have the whole fleet wiped out, which is a possibility.

General ZETTLER. That ties back to Congressman Taylor's question again. We have this fleet here. And as hard as we work at it, it is 42 years old. We have never walked with 42-year old aircraft before.

We open them up. We look at them. We use the modern technology to make analysis.

But we are doctoring people that are 100 years old, is the equivalence, you know? What is it next that is going to go and not perform like we want here? What surprise is in there?

And we do seriously think about the risk of losing a large percentage of our tanker fleet for a period of time while we analyze the failure, re-engineer it, manufacture it, install it and return it to flying status.

Mr. SAXTON. Thank you.

Mr. Chairman, I have no more questions at this time.

Mr. BARTLETT. Thank you.

Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman. I just want to thank the gentlemen for testifying today. I have no questions at this time. But I may have some to submit for the record.

Thank you.

Mr. BARTLETT. Mr. Taylor.

Mr. TAYLOR. Yes, sir. I would like to open this up to the panel. Can you explain if there are significant differences in the corrosion problems that you are experiencing between the E and the R models.

I notice that you are just retiring the Es. Is that because of the engines? Or is that because of the corrosion problem? Or both?

General ZETTLER. Well, there are some differences. The Es are the earlier versions. There were some things in the manufacturing processes in the later stages of the Rs as to how we treated overlapping seams, to what corrosion preventative applications were applied in the manufacturing that, for the later Rs, make them better than your early Rs and the Es.

One of the most significant issues, though, is on the pylon strut, which is what the engine is suspended on from the wing. And the pylon struts, as I said in one of the charts there, were fielded from commercial airliners that had a wide range of hours on them, but more than 40,000 hours.

And we bought those. And we installed those in the E in order to upgrade the capability of those aircraft. The TF33 engine gave more power and thrust and therefore, offload capability. It was better to maintain than the J57 engine.

And so we bought those pylons. We installed them on there. We did the normal amount of maintenance.

But here we are, 15 years to 10 years later with a substantial amount of corrosion; so much corrosion, in fact, that we have done two things to short-stop it. One, we put operational requirements or limitations on the operational requirements that General Essex can better talk to.

But we limited the maneuvering in flight. We eliminated the amount of takeoff weight.

And then we have said, for some of them, you have to do immediate, short-term temporary repairs. And then over the life of the next five years, you have got to rebuild completely. And actually it is a remanufacturing of that pylon.

So that is a summary that says yes, there are some big differences on the E model from the R model.

Mr. SAXTON. Will the gentleman yield?

Mr. TAYLOR. Certainly.

Mr. SAXTON. General, the R model modification program went further even than engines and pylons, did it not?

General ZETTLER. Oh, yes sir. I think there were 29 different subsystems that were substantially improved or replaced on the R model from what would have been the A model when we upgraded them. So just when you think about the R model being an aircraft with new engines on it, dismiss that.

It is a new aircraft in the sense that we reworked the landing gear systems. We reworked the hydraulic systems. We put in some new wiring for those systems.

And it goes through about 26 other modifications to make it what is an R model. It is just not a matter of a new pylon and a new engine on that aircraft.

General ESSEX. I would add to that—excuse me.

General ZETTLER. I was going to finish with if you take an E model and you say re-engine it, then all you are getting is a new engine and those modifications. You still have a 42-year old airplane.

You still need to upgrade this airplane in terms of the rest of its capability. And you will experience not the problems that the E has anymore, but slightly less problems that the R has.

So it is not a total—I have a new airplane. I do not want to mislead anybody here. You have only improved those systems on the R model.

Mr. SAXTON. One final question. Did the modification program include any issues that dealt with corrosion?

General ZETTLER. I would say certainly we do not put airplanes into work like that without that. The general process that was used is we put the aircraft into a PDM, Program Depot Maintenance, got it back up to the top condition. And then we put it into the modification program where they went through the mods on it.

So we treated the corrosion before we did the mod. But you would have to remanufacture the aircraft to eliminate some areas where the corrosion, such as those skin areas, come up. And that was not done when we did the Rs.

Mr. TAYLOR. Mr. Chairman, yield back my time.

Mr. BARTLETT. Thank you. You heard the bells for a vote. We have a few minutes yet. And I will get started with questions. And then we will go to the vote near the end of the vote, so we can come back very quickly and continue the hearing.

It is my understanding that these KC–135s were all built between 1957 and 1964 or 1965?

General ZETTLER. That is correct, sir.

Mr. BARTLETT. None of them were manufactured as the R model. They were manufactured as A and E?

General ZETTLER. That is correct.

General ESSEX. A. As A, sir. As A.

Mr. BARTLETT. Which was built first, the A or the E?

General ZETTLER. The A, sir. And the Es came much later, 20 years later, I guess.

General ESSEX. In the 1980s, early 1980s.

Mr. BARTLETT. Now all of the As have been converted to Rs?

General ESSEX. If I could, sir, 732 As were built. A program was started to convert them to R models, to re-engine them. However, it was taking a while. And they decided and there was an opportunity to go after some commercial engines that were available off of old 707s that were being retired.

They were rather high time, but they had a lot of use. And those engines were put on some of the As.

So you had two re-engining programs. You had the R model program and the E model program. And the plan was originally that the Es would eventually be turned into Rs.

But in the about 1991 timeframe, analysis was done that said, based on the life of the airplane, it is not financially, economically

sensible to re-engine those to R models because there was not time to get the payback for the investment.

Mr. DICKS. So that was 1991?

General ESSEX. Yes, sir. That was 1991.

Mr. BARTLETT. Yes, but are you not converting four Es this year to Rs? And six last year? The fiscal year 2004 budget asks for four?

General ESSEX. There have been adds to continue that conversion on a few of our planes.

Mr. BARTLETT. I noticed in your testimony that you were referring to the Es as the planes that would be retired.

General ESSEX. Yes, sir.

Mr. BARTLETT. Why not Rs?

General ESSEX. Sir, the Es are the ones that we are having the most problem with. They have the lowest mission capable rate and have the highest cost and the highest cost growth.

Mr. BARTLETT. But you are now converting Es to Rs. So once the E is converted to an R, it is now an R, is that correct?

General ESSEX. When you make the improvements, when you make the $40 million or $42 million—depending on what year you are looking at—investment to turn an E model into an R model, then you do get an increase in capability. However, you do not make it a new airplane. You still have all those——

Mr. BARTLETT. But it is still an R?

General ESSEX. Yes, sir.

Mr. BARTLETT. And still preferable to an E.

Mr. SAXTON. Would the gentleman yield?

Mr. BARTLETT. Yes, sir.

Mr. SAXTON. General Essex, I think I heard you say—and I think you are probably right—that these conversions are being undertaken because Congress appropriated the money for the program. Is that right? Did you request those conversions?

General ESSEX. I do not believe so, sir. I do not think we requested——

General ZETTLER. No, sir. We did not. Those were congressional adds.

Mr. SAXTON. So it is literally at the congressional direction that those——

General ZETTLER. Yes, sir. Yes, sir.

Mr. SAXTON [continuing]. Conversions are being made? I just wanted to clear that point up.

Mr. BARTLETT. It is my understanding that the budget requested the conversions. Is that correct?

General ESSEX. I am sorry, sir?

General ZETTLER. We will take that back for the record. It was my understanding, Mr. Chairman, that we did not request that in the budget and that those are adds by the Congress.

[The information referred to can be found in the Appendix beginning on page 73.]

Mr. BARTLETT. Okay. Let's break for the vote now. We will come back as soon as we can to continue the hearing. We will be in recess for a few minutes. Thank you.

[Recess.]

Mr. BARTLETT. Our subcommittee will reconvene. When we broke for the vote, we were talking about the KC–135s, their manufactur-

ing between 1957 and 1965, the fact that they were all manufactured as As or Es, that the As are the older ones. Is that my understanding?

General ESSEX. Sir, all were manufactured as As. And some were later converted to Es and some were converted to Rs.

Mr. BARTLETT. All manufactured as As and some converted to Es and some converted to Rs. And the R was the better conversion, with better engines and better performance and larger payload.

So now we are in the process of slowly converting Es to Rs—six, I understand, in the depots as we speak and four, although some dispute about whether you want two or four. But the budget that came to us had four planes in it.

And then, General Essex, you testified that the Es were significantly less of a performer than the Rs. So if we are going to retire planes, it would be the Es that are retired.

But since you are converting Es to Rs, you could presumably, with enough money and enough time, convert all the Es to Rs. And then you would not have the choice between Es and Rs. Is that correct?

General ESSEX. We choose not to convert the fleet of Es—133 of them—to Rs because the economic payback for doing that—two reasons—the economic payback for doing that is not there, as we have to begin the replacement program eventually anyway. And also because if you make an E into an R model, you get an improvement in its mission capability rate, a little bit.

But you do not—it is not a SLEP. It is not a service life extension program. It does not get rid of the majority of the old airplane problems.

Mr. BARTLETT. I thought that conversion increased the anticipated hours from 36,000 to 39,000.

General ESSEX. It does a lot of things. It does, in fact, that is the prediction. However, the problems that we have with the KC–135 fleet are not really flying hour limits. It is more age limits.

And I think General Zettler was talking about this.

Mr. BARTLETT. But you have just testified that the Rs and the Es are essentially the same age.

General ESSEX. The Rs and the Es are essentially——

Mr. BARTLETT. The same age. Okay.

General ESSEX [continuing]. The same age, within a couple of years.

Mr. BARTLETT. All right. Why was an analysis of alternatives not done in anticipation of this really very large procurement? And whether we lease them or whether we buy them, we are procuring them, are we not?

General ESSEX. Yes, sir.

Mr. BARTLETT. It is the same dollars. Why was an analysis of alternatives not done?

General ESSEX. Sir, the service decided to proceed with the—once authorized—to proceed with the negotiations and discussions on a replacement program focusing on the lease. The decision was to postpone the analysis of alternatives. And if—our plan is that if the lease program does not go forward, we will of course do an analysis of alternatives immediately.

Mr. BARTLETT. Help me understand how multiyear leasing is any different than multiyear procurement, except that our arcane procurement rules slow down procurement. That does not have to be. It is just because those are our rules.

But setting that aside, help me understand how a multiyear lease is better than a multiyear procurement.

General ESSEX. Well, I am not really the expert on that. We can——

Mr. BARTLETT. Well, we are going to have a full committee hearing on this. And we will ask that question again when we have that full committee hearing.

Mr. Curtin, in your prepared statement, you noted the KC–135s average about 300 hours per year between 1995 and 2001. But since then, average hours have increased to 435 hours.

Do you believe the increased utilization rate has affected average flying hour costs or other support costs?

Mr. CURTIN. Well, the big increase after September 11th, obviously, of 2001 has put the planes in the air a lot more than they used to be. There is no question.

And I think it is right around those numbers you cite. In some ways, by flying them more hours, you have actually reduced your per-hour flying cost for the entire fleet.

Overall, though, you are adding to that wear and tear problem, the projections that you referred to about the 36,000 hours or 39,000 hour, lifetime flying hours, were based on the original 300 hour per year average. This increase since then obviously affects how quickly you get to that 36,000 limit. What you do not know is whether this is a new steady state operating level we are going to be at or whether this is a temporary blip because of the current high state of operations.

It is that kind of issue that you really need to look at in a new requirements study to really estimate what that future flying hour requirement is going to be.

Mr. BARTLETT. The average plane in the fleet, I understand, has about 20,000 flight hours.

Mr. CURTIN. I think that is a good estimate. Just over half of this 36,000 or 39,000.

Mr. BARTLETT. And they are now how many years old?

Mr. CURTIN. There are some of them that are more than 40 years old. The fleet average is 42 years.

Mr. BARTLETT. I understand that arithmetic using the present flight hours and the remaining hours that only a few of the planes would have exceeded their flight hours by 2040, is that correct?

Mr. CURTIN. Yes, that is true. That is true. But they would be 80 years old at that point, sir.

Mr. BARTLETT. That is true. I am almost 80 years old. And I am still good for a few. [Laughter.]

Mr. DICKS. I understand. You do not have any corrosion though, Mr. Chairman. [Laughter.]

Mr. BARTLETT. I do, as a matter of fact. It is called arthritis. And you learn to make do, which is what the Air Force is doing with their planes.

Has the increased utilization rate affected mission capability rates?

Mr. CURTIN. It has not that we have seen. It looks like the preliminary data we have seen from Operation Iraqi Freedom, for example, looks like an 86 percent mission capable rate for that operation.

But that is not to say it is not without some extraordinary efforts, maintenance efforts, to be able to achieve those kind of flying hours.

Mr. BARTLETT. I would just like to look at the dollars and cents here for a moment. To maintain these planes now, the Rs, it costs $3.7 million, $2.7 million a year? Which is it?

Mr. CURTIN. We have seen an estimate of $3.7 million for the Rs.

Mr. BARTLETT. $3.7 million. Okay.

Mr. CURTIN. And about $4.6 million for the Es.

Mr. BARTLETT. For the Es. But once you have converted the Es to the Rs, then you drop down to the lower maintenance cost. In terms of the percentage of the capital costs, this is about three percent?

Mr. CURTIN. I am not sure.

Mr. BARTLETT. If the new planes will cost us $131 million—is that the number? And you are spending $3.7 million a year to maintain current planes, that translates to roughly three percent, which is——

Mr. CURTIN. Those numbers are right, yes.

Mr. BARTLETT. Yeah, I do not know if we can even borrow money for three percent. The point I am making is that this represents a fairly modest percentage.

Also, over the life of the plane, you ultimately have to pay for it. It just is not maintenance costs. And if you are spreading that life over whatever time—50 years, 80 years, whatever you wanted—50 years, it is about $2.6 million a year that you would have to amortize the principal to have it all paid off at the end of 50 years.

Now if you want to go to 80 years, it is down to about $1.8 million per year or something like that. So if you are looking at new planes and what they cost us, they cost us, at a minimum, the interest on the money that is borrowed.

And they cost us, you would need to amortize their life, whatever you think it is going to be, 80 years. Then you are about $1.8 million per year on that.

And it does not cost zero to operate these planes, does it?

Mr. CURTIN. No, obviously, you have got your operation and support costs, the crews and the routine maintenance and the annual maintenance.

Mr. DICKS. But they would be—if the chairman would yield—they would be substantially less than the repairs that we are doing on the E models. Is that not correct?

Mr. BARTLETT. Depends on how long a time you amortize the, what is it, how many million to do the E to R?

Mr. CURTIN. We were talking about $30 million last year. You mentioned $40 million this year. I mean, I am not sure exactly what the number is. But maybe it is $40 million.

Mr. BARTLETT. The number I had seen was $29 million, which was roughly the $30 million that you—so it depends on how long

a time you want to amortize over as to how much it costs you per year to get there.

General Zettler, do you believe the increased utilization rate has affected flying hour and support costs or mission capability rates?

General ZETTLER. Actually, the overall cost component has a fixed cost and a variable cost. The variable cost has surely gone up. But the fixed cost is spread over a larger number of flying hours.

So there is an increased component. But it is because of the variable costs which are consumable spares, recoverable spares and the fuels costs. So those, as you fly more, those go up.

Mr. BARTLETT. So cost per hour has not necessarily gone up because you are amortizing——

General ZETTLER. True. That is right.

Mr. BARTLETT [continuing]. Over more hours. What are the current costs per flying hour for the KC–10s, 135–Es and 135Rs? Do you have those numbers?

General ZETTLER. I do not have those with me.

Mr. BARTLETT. If you could give them to us for the record?

General ZETTLER. We will give them to you for the record. Be happy to do that.

[The information referred to can be found in the Appendix beginning on page 73.]

Mr. BARTLETT. Thank you very much.

General ZETTLER. We will categorize exactly what we are giving you there.

Mr. BARTLETT. General Essex, the Tanker Requirements Study 05 identified a need for 500 to 600 KC–135R equivalents and approximately 900 to 1,000 air crews and noted that none of the scenarios examined showed excess tanker capability, but also identified shortfalls in both aircraft and air crews.

While the study showed that workarounds are available to mitigate some of the shortfalls, the workarounds also increased risk to the warfighter. Why, in light of this study and these conclusions, is the Air Force planning to retire KC–135Es, rather than converting them to Rs so that we can address that shortfall?

General ESSEX. The decision to retire the worst of our fleet, the KC–135Es, is because we need to invest in better performance in what we retain. The loss in the KC–135E fleet we mitigate—in numbers of airplanes—we mitigate with retaining the air crews and the maintainers and applying them across the rest of the KC–135 fleet.

The air crews, for example, on the KC–135 fleet, when it was first manned by Strategic Air Command, its mission was Psychological Operations (PSYOP), the nuclear war plan. The crew ratio was 1.26 crews per airplane, which was basically enough to pull alert and let people take leave now and then. And that was it.

And I did that for a long time. So I am very familiar with that.

The mission that we have today, since the end of the Cold War, really is not compatible with that type of crew ratio. We were not able to use the airplanes we have as efficiently as we should because of low air crew and low maintainer manning, based against the number of airframes.

That has been mitigated somewhat by the fact that we have had a lot of airplanes in depot status, more than our backup aircraft

inventory by a lot. And so we were able to keep air crews for whom there was no airplane at home to fly, based on the normal crew ratio.

And so effectively, we were able to have a somewhat artificially high crew ratio and do a little bit better job. We have done as much as we can to improve the KC–135 depot and the flow of airplanes through the depot to make more airplanes available. And that has helped too.

But to deal more directly with what I think is the heart of your question, we believe it is time to make the decision to not put good money after bad, to instead of shoring up the worst performers, to use the money to get better performance from what we can retain and that the risk is more than acceptable.

Mr. BARTLETT. But if a study showed that we had a shortfall, isn't the quickest way to get more capability available to do the E to R conversion?

General ESSEX. If you convert Es to Rs, you spend—there are about 100 E models that can be converted. You cannot convert all 133 because some of them are in worse shape than others and it is just not a good economical choice at all.

If you did that, the money that you would spend, you could have spent on about 20 brand new airplanes. And so you can either get the equivalent of 20 KC–135Rs. Let me just do the math in public here for a minute and hopefully it will work out.

If you take 100 KC–135Es. They are about 80 percent, a little better than 80 percent as capable as an R model. So if you modify 100 of them, you gain that 20 percent for that 100. So that is about 20 R model equivalents that you gain for the investment.

That is all. You do not gain 130. You do not gain 100. You gain effectively 20 R model equivalents. And you spend between $3 billion and $4 billion doing that.

Divide the price of a new airplane into that $3 billion or $4 billion and which choice do you make? It looks to me like we definitely should proceed with replacing these old airplanes and move ahead.

Mr. BARTLETT. You may be exactly right. I would just be a little more sanguine if you had had the analysis of alternatives study that is ordinarily done before a procurement anywhere near this size.

Can the Air Force meet its current air refueling requirements with its existing fleet of 59 KC–10s, 411 KC–135Rs and 133 KC–135Es? How much larger will this fleet—how much longer will this fleet meet Air Force requirements?

General ESSEX. Sir, we have been able to get the job done in all the operations we have been called upon recently. And as you know, they have been taxing.

We have had to employ workarounds. And yet, the crews and maintainers have done an outstanding job. And we have done the job extremely well.

As for how much longer, would you ask that part of the question again?

Mr. BARTLETT. How much longer will this fleet meet Air Force requirements?

General ESSEX. It is a matter of risk. We risk block failures. We talked about how 90 percent of our nation's air refueling capability, upon which we totally rely to be a global power, is in the KC–135 fleet.

We talked about how they average over 40 years old and that, by the nature of the beast, we risk block failures. So I cannot predict an unknowable.

Mr. BARTLETT. General Essex, Tanker Requirements Study 05 was completed before 9/11. And since then, new defense planning guidance has been implemented. Does the new defense planning guidance increase requirements for the number of air refueling aircraft?

General ESSEX. Sir, we are not sure. We believe a new requirements study is in order. And we are certainly looking and evaluating what this means to us.

But I do not have an answer for that.

Mr. DICKS. Will the chairman yield just for a brief point?

Mr. BARTLETT. Yes, sir.

Mr. DICKS. As I understand it, according to General Handy and to General Eberhart, because of the standing up of the Northern Command, and we have seen the requirement for tankers has, in fact, increased because now we have to have tankers to refuel fighter planes and other aircraft that are involved in protecting the United States. So at least according to the Commander in Chief (CINC), this is a new requirement.

General ESSEX. Yes, I was basing my answer strictly on the defense planning guidance, the 1421. But of course, Congressman Dicks makes an excellent point. And I will be sure and include that when I talk to my boss when I get back home, that I left out homeland defense.

That is certainly a big mission and can call for over 100 additional tankers in the mix.

Mr. BARTLETT. Intuitively, that logic seems very defensible. But here we are, about to commit $16 billion of our children's money—by the way, we do not have any money; we are borrowing it from our kids and our grandkids.

So we are about to commit $16 billion of their money. And we have not completed the defense planning guidance.

And we have no analysis of alternatives. Wouldn't you be a little more sanguine about spending your children and grandchildren's money if we had the advantage of these studies?

General ESSEX. As far as the decision to replace KC–135s and get on with recapitalization, I am totally convinced that we are doing the right thing. This is an old airplane. It has lived its life. It has done a great job and will continue to do so, but with a lot of extra effort.

So I have no doubt in my mind and am quite sanguine about that decision. And the decision to replace them, I think, is a decision that has to be made and very soon.

Mr. BARTLETT. Intuitively, it is hard to argue with your logic. But still, wouldn't it be nice if you had the definitive studies that almost always precede a major expenditure of monies like this?

General ESSEX. I think an analysis of alternatives is always helpful in these deliberations.

Mr. BARTLETT. Do you believe a new tanker requirements study should be conducted?

General ESSEX. Say it again, sir?

Mr. BARTLETT. Do you think a new tanker requirements study should be conducted?

General ESSEX. Yes, sir.

Mr. BARTLETT. Is the Air Mobility Command currently working on such a study?

General ESSEX. Not per se, although we are certainly doing a lot of work and analysis in defining the requirements and how we will go about meeting them. But we have not started what would technically be called a tanker requirements study formally.

Mr. BARTLETT. If you believe a new tanker requirements study should be conducted and it has not been conducted, then how can we be so sure that acquiring these 100 planes is the right answer?

General ESSEX. Because we are convinced that the requirement for air refueling is large and will continue to be very large. As we talked just a moment ago, the requirement is growing actually, although I cannot give you a specific number right here for how much it has grown, based on the new defense planning guidance yet.

But we know it is growing. We know it is going to continue to be very large. And we know that the aircraft fleet is old. It is running into all kinds of problems—more expensive, longer to maintain, less availability—and that trend cannot be reversed.

And we also know that if we only replace them at 20 per year and you replace only 500 of them, you have a 25 year replacement program on a fleet that already averages over 40 years of age. So you are looking at airplanes well over 70 to 80 years old upon which you are basing a tremendous amount of our national military strategy.

Mr. BARTLETT. General, you are doing a very good job. But I am not sure that this oversight hearing is the place to conduct this study.

Let me quote from your tanker requirements study for fiscal year 2005, released in early 2001. And I am quoting now. "The need to address KC–135 replacement mandates an air refueling analysis of alternatives." What happened to that mandate?

General ESSEX. My understanding——

Mr. BARTLETT. I am quoting directly from the study.

General ESSEX. Yes, sir. My understanding is that immediately after—well, in the fall of 2001 and then early into 2002, as we were given guidance to look at, evaluate a lease of KC–767s that we proceeded on to do that and tabled the effort to do the Abbreviated Operational Assessment (AOA).

Mr. BARTLETT. What you are saying is that we have not conducted that definitive study. But we have an intuitive analysis that says this is the right thing to do?

General ESSEX. I would not say it was intuitive. I think there was a lot of—there has been a tremendous amount of study that has gone into this over many years. And it is not that in the fall of 2001 we suddenly decided 767s would be good. We had been looking at these options, alternatives over many years.

It is a continuing process. And in fact, a tremendous amount of study, looking at various issues, has gone on since 2001 and, of course, before that.

Mr. BARTLETT. If we had done all this work and all this analysis and all these studies, wouldn't it have been nice to formalize that as an analysis of alternatives so we would not be asking these questions?

General ESSEX. Speaking strictly from a personal perspective as the guy at the microphone, I would have to say yes.

Mr. BARTLETT. Thank you.

General ESSEX. It would be easier on me right now if that had been done. [Laughter.]

Mr. BARTLETT. What is the mishap rate for the KC–10s, KC–135Es and KC–135R fleets?

General ESSEX. I could not hear the beginning.

Mr. BARTLETT. What is the mishap rate for these three different planes that you have in the tanker fleet?

General ESSEX. I happen to have that actually. The mishap rate for the KC–135 fleet, over its entire lifetime, is .64 per 100,000 flying hours.

We do not have it broken out in different types of KC–135s. And over 2001 to 2002, it is zero per 100,000 flying hours.

For the KC–10, over its lifetime, it is .77. And for the 2001 to 2002 timeframe, it is 1.24.

Mr. BARTLETT. Did you give me the R?

General ESSEX. All the KC–135 numbers are combined.

Mr. BARTLETT. Oh, they are all lumped together. All right. Okay. Fine.

Do you consider these rates to be acceptable?

General ESSEX. Well, we never consider a mishap to be acceptable. It is something we keep working on all the time. And they are fairly low. Yes, they are fairly low.

They do not all represent, by the way, a mishap does not represent just a fatal accident or something. It could be an engine—

Mr. BARTLETT. Understand. Understand.

General Zettler, the GAO has told us that the service life of the KC–135E is 36,000 hours and the KC–135R R has a service life of 39,000 hours. Does the Air Force agree with these numbers?

General ZETTLER. We agree with those numbers in the context that they are for strict fatigue considerations. There are other considerations that have to go into the service lives of the aircraft that have to do with all the corrosion and the corrosion's effect on various components of the aircraft.

Those are two limited areas of the fatigue life, based on the historical mission parameters, drive you to. That is when that part would have to be replaced to allow the aircraft to continue on or that is when you would retire the aircraft. You would make that decision.

But keep in mind that what we are dealing with here is a series of unknown unknowns of what corrosion does to this aircraft in different locations.

Mr. BARTLETT. The current average number of hours on both of these fleets is approximately 20,000, give or take?

General ZETTLER. A little less than 20,000, yes, sir.

Mr. BARTLETT. A little less than 20,000. Okay. Which is about half of the projected life expectancy.

General ZETTLER. That is correct.

Mr. BARTLETT. Given these current hours and projected utilization rates, what is your estimate of the useful life of both the KC–135E and R fleets?

General ZETTLER. Well, I would put it to you in this context, Mr. Chairman. The Air Force, when we do our force structure programming, we say that we would expect to have about ten percent of our aircraft, at the maximum at any one time, in the depot.

And we had 33 percent in the depot a year-and-a-half ago. Now we have it down to about 20 percent in the depot.

So I think that perhaps because of the amount of time we are spending in the depot and the number of man-hours that the troops are spending to maintain the aircraft on the flight line, we have reached our economic service life.

Mr. BARTLETT. But it is useful to look at the numbers involved there and to look at the interest that one needs to pay on a $131 million aircraft, to amortize the life of that aircraft over the—you have to divide into the lifetime of the aircraft the years, divide the years into the cost. And then you get the cost per year.

And of course, then you do have costs for running the new airplane too. And I have not seen an analysis of those numbers to tell us economically where we do come out on this.

Mr. Curtin, is your analysis consistent with these trends?

Mr. CURTIN. Yes, I think it is. And the information we are reporting is really coming right out of Air Force documents. The economic service life study that was done in 2001 is where that 36,000 and 39,000 hour figure comes from.

And my understanding from that study is that it actually projected that the structural integrity, because of metal fatigue and the kinds of things that usually bring down airplanes, the air frame has an even longer life than 2040. And my understanding of the study was that the 2040 year included the effects of corrosion.

And that was really why the 36,000 hour limit and the 2040 timeframe, because is so severe——

Mr. DICKS. Will the gentleman yield just for a brief point?

Mr. BARTLETT. Yes, sir.

Mr. DICKS. Is it not true, though, that the cost per year of maintenance of these older airplanes has gone up dramatically over the last few years? One of the things we have found throughout, with all these older airplanes, is that the Operation and Maintenance (O&M) costs have risen dramatically.

Is that not true? What was the number on the KC–135Es? Was it not——

General ZETTLER. You are correct, Congressman Dicks. And we went from a depot package of 16,000 hours to 32,000 hours. We went from a depot cost of $2 million in round numbers to $7 million in round numbers.

So those are the types of cost increases that we are seeing from taking care of this fleet.

Mr. DICKS. And we have to do this——

General ZETTLER. Every five years.

Mr. DICKS. It is not just once you redo these things. Every year, how many is it? Four or five years?

General ZETTLER. Every five years, they are going to go back through that depot cycle until we say that we can not allow them to go five and we have to make a judgment that says let us do them four. And we do not see that today, but that could happen.

Mr. DICKS. So this is going on and on and on. So all this cost of maintaining these older airplanes, at some time, I would think Mr. Chairman—you are very able at the numbers—you say intuitively, as Congress did when it passed this amendment, hey, we have to start replacing these old airplanes so that we do not have all of our eggs in one basket.

And if we had a block failure, we could not operate. So at some point, you say let's start buying a new airplane.

And I just think this is common sense. That is why the Congress overwhelmingly approved this.

Mr. BARTLETT. I am——

Mr. DICKS. You also remember what it says right down there in front, it says the Congress is responsible for protecting the American people, for raising armies and navies and, by inferences, Air Force. Congress has every right to step in here and say, "Wait a minute. It is time to start buying some new airplanes."

Mr. BARTLETT. I am impressed with how bright congressmen are. But I am not sure that we should supercede definitive studies conducted by the experts, which have not been done.

Mr. DICKS. Judgment, Mr. Chairman, judgment, intuitive judgment.

Mr. BARTLETT. That is true. One of the points I make about living longer than most anybody in the Congress here is that one of the things that comes with age is wisdom. And that is your judgment, sir. Okay.

Mr. Saxton, you have a comment?

Mr. SAXTON. Mr. Chairman, I am not sure if—well, let me put it this way, you are asking a lot tougher questions than I would. But that is fair.

And I just wanted to say—and I hate to sound like a broken record—but we ought to learn about how and when to procure new systems, at least partially based on history. And here is my broken record part, back to the center wing of the C–141 again. We nursed those babies along for a long time. They had different problems.

They were used, besides carrying munitions and things overseas, they were used for low air drop. And they had to practice low air drop a lot. And because they practiced low air drop in rough weather and in turbulent weather, I should say, it was stressful on the wings.

And we maintained them and maintained them and maintained them. And pretty soon, we found out we had a block failure and we had to replace the center wing.

And pretty soon, it became pretty obvious that if we were going to continue to fly these birds, they were going to cost a tremendous amount of money, more than they were worth. And man, I lived through that whole debate. And we are just in that same debate all over again, but with a different airplane this time.

And we have to come to a logical conclusion. And I sit and listen to the questions and I think they are really good questions. And I hear really good answers.

So I just wanted to say that I think we have been here, done that.

Mr. DICKS. Will the gentleman yield just for a brief moment?

Mr. SAXTON. Be happy to.

Mr. DICKS. If I asked the two officers, in your personal and professional judgment, do you think we need to start replacing these airplanes with a new airplane?

General ESSEX. Yes, sir. No doubt.

General ZETTLER. Without question.

Mr. DICKS. Thank you.

Mr. BARTLETT. Thank you very much.

General Zettler, the Tanker Requirements Study 05 noted that a companion study to the Tanker Requirements Study 05, the Economic Service Life Study, projected KC–135 depot levels that could be achieved if recommended initiatives are funded. Please describe the recommendations in the Economic Service Life Study.

General ZETTLER. Mr. Chairman, I believe those recommendations were that we anticipate that many of these major structural repairs were occurring, that they would need to be done, that we fund the provisioning of the parts needed to facilitate timely replacement, we accelerate the capability of the depot to do that with the right types of tooling. And for the most part, those have been funded and done.

In fact, that is a large part of how we went from 176, I think was the high number, down to 86 to 90 that we have today, by significantly reworking the depot flow line at particularly Tinker, who has been very successful and, to some degree, at the two contractors.

Mr. BARTLETT. I gather that these requests for funding, what is the impact on the fleet?

General ZETTLER. Yes, they were done as part of the rate to repair the aircraft. And they were funded by Mobility Command, the Guard and Reserve.

Mr. BARTLETT. Has the KC–135 fleet achieved 85 percent mission capable rates?

General ZETTLER. Not historically in recent years and only sporadically during our conflicts at selected locations. So no, it has not achieved 85 percent.

Mr. BARTLETT. What have they achieved?

General ZETTLER. It is 78 to 80 percent on the R models and 71 to 73 percent on the E models.

Mr. BARTLETT. What were the depot aircraft levels identified in the Tanker Requirements Study 05? And what are they now?

General ZETTLER. They were, in the study, they were 135 to 140. They got up to 170-plus. And they are now at 86 today.

Mr. BARTLETT. Just a couple more questions. And I want to thank you all very much for your patience.

General Zettler, the committee notes that the Air Force plans to retire 68 KC–135Es between fiscal years 2004 and 2006 and 44 aircraft planned for retirement in fiscal year 2004. The Senate in-

cluded a provision that would restrict the number of KC–135Es to be retired in fiscal year 2004 to 12 aircraft.

If this provision were to become law, what is the impact of this legislation to the Air Force?

General ZETTLER. Well, I will take the first stab at that and General Essex will back me up. But first of all, it disrupts our long-term tanker road map. Second, it gives us the burden of carrying those aircraft.

Third, we have to go find the money to operate those aircraft, which in our current budget situation would be untenable. We would have to break other programs to do it.

General ESSEX. I do not have anything to add to that.

Mr. BARTLETT. General Zettler, the media recently reported that a contract for re-engining KC–135s that was signed by the Air Force subsequent to the announcement of the KC–767 lease agreement has been put on hold. Is that true?

General ZETTLER. I am not sure if the program office has done that, Mr. Congressman. I would take that for the record and get back with you.

Mr. BARTLETT. We would appreciate that. Thank you.

[The information referred to can be found in the Appendix beginning on page 73.]

General ZETTLER. It would certainly be a prudent act if we are going to go lease to stop modification of others.

Mr. BARTLETT. Was there a contract signed by the Air Force with CFM International subsequent to the KC–767 lease agreement announcement?

General ZETTLER. I would like to take that question for the record.

[The information referred to can be found in the Appendix beginning on page 73.]

Mr. BARTLETT. Okay. And the next question: has this contract been put on hold?

General ZETTLER. Take that for the record, too.

[The information referred to can be found in the Appendix beginning on page 73.]

Mr. BARTLETT. And also, you might provide for the record what the amount of termination liability is for this contract. What will this cost us to not go through with that?

General ZETTLER. Very well. Will do.

Mr. BARTLETT. I would just like to note for the record that, as chairman of this subcommittee, I came to this hearing with no preconceptions. What we have tried to do, consistent with what I think is the responsibility of an oversight committee, is to get all of the facts on the record.

Please do not interpret my questions as favoring any specific course of action. I came here with a totally open mind. And that is the spirit in which I came to this hearing and in which we conducted this hearing.

Are there any others who have any final comments or questions before we thank the panel for their testimony and the answers to our many questions? Okay.

Thank you all very much. And the hearing is adjourned.

[Whereupon, at 4:29 p.m., the subcommittee was adjourned.]

APPENDIX

JUNE 24, 2003

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

JUNE 24, 2003

Statement of the Honorable Roscoe Bartlett
Chairman, Subcommittee on Projection Forces

Air Force Airborne Tanker Program

June 24, 2003

The Subcommittee will come to order.

This afternoon we will receive testimony from the Air Force and the General Accounting Office on the Air Force airborne tanker fleet.

This is the first of two hearings planned on the tanker issue.

Today's hearing will focus exclusively on the current Air Force KC-10 and KC-135 airborne tanker force structure, the trends and status of those aircraft, and the associated budget request set forth in the President's Budget for fiscal year 2004. The second hearing will be held by the full committee and will address the details of the KC-767 lease proposal announced by the Pentagon in May. A hearing date will be established once the details of the leasing agreement have been finalized and provided to the Committee.

The Department of Defense currently uses a number of aircraft for airborne tanking operations, including KC-10's, KC-135's, and KC, HC, and MC-130's -- as well as a number of relatively small tactical aircraft that can be configured as tankers. However, the KC-10 and KC-135E & R currently provide the majority of the Department of Defense's air refueling requirements.

First acquired in 1957, the KC-135E current fleet of 133 aircraft has an average age of nearly 45 years. A 2002 GAO briefing indicated that the Air Force projects a lifetime KC-135 flying hour limit of 36,000 hours. With the current accumulated flying hour average less than 20,000 hours and at current use rates, these aircraft could potentially be operational for another 40 years.

The Air Force has been upgrading its KC-135E's with new engines, updated cockpit, and other modifications to the KC-135R configuration at a cost of approximately $29 million per aircraft. This is expected to extend the life of the KC-135R's to 39,000 hours.

We have three witnesses with us today to help us understand tanker requirements and the health of the current tanker fleet. I welcome:

First, Lt General Mike Zettler, Deputy Chief of Staff for Installations and Logistics.

Second, Major General Paul Essex, Director of Plans and Programs, Air Mobility Command.

And finally, Mr. Neil Curtin, Director of Defense Capabilities and Management, General Accounting Office.

Before we begin let me call on my friend, the gentleman from Mississippi, the ranking Democrat of the subcommittee, Mr. Taylor, for any remarks he would care to make.

After Mr. Taylor's remarks:

If Mr. Skelton is present, please recognize him for comments:

General Zettler, the floor is yours followed by General Essex and Mr. Curtin.

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE COMMITTEE ON ARMED SERVICES

PROJECTION FORCES SUBCOMMITTEE

UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: Air Refueling Tanker Requirements and Status of Tanker Fleet

STATEMENT OF LT GEN ZETTLER
Deputy Chief of Staff for Installations and Logistics

June 24, 2003

NOT FOR PUBLICATION UNTIL RELEASED

BY THE COMMITTEE ON ARMED SERVICES,

UNITED STATES HOUSE OF REPRESENTATIVES

Chairman Bartlett, Ranking Member Taylor and Members of the Subcommittee:

Thank you for the opportunity to appear before you today. General Essex and I have come before you to discuss the Air Force's aerial refueling requirements, the status of the KC-135 fleet, and our current plans and programs in the fiscal year 2004 budget request to upgrade and sustain the aerial refueling fleet. My testimony will discuss the status and health of the KC-135 fleet, General Essex will discuss the requirement, and our current plans and programs in our 2004 budget request.

At an average age of over 40 years, the KC-135 fleet is the oldest combat weapon system in the United States Air Force (USAF). As this tanker fleet ages, ensuring warfighters have the required number of tankers to perform their wartime mission is a growing challenge. Through the nineties, the KC-135 fleet started to show its age. In 1991, Air Force Materiel Command initiated an Aging Aircraft Program to analyze the potential growth in major structural repairs of the aging fleet. By 2000, 32% of the KC-135 fleet (29% of the entire USAF refueling fleet) was unavailable due to depot level maintenance. This reduced the refueling capability to the warfighter and caused a backlog at depot facilities, increasing the average number of days in depot level maintenance to over 400.

The USAF Chief of Staff challenged Air Force Materiel Command and Air Mobility Command to reverse this trend immediately. Air Force Materiel Command radically restructured their processes, maintained depot repair lines, and with the concurrence of Air Mobility Command, deferred depot inputs. The annual KC-135 depot price per aircraft grew by 18% compounded annually, and the fleet availability decreased by 1% per year. We reached the

conclusion that the fleet had entered into a fiscal and availability challenging period and some recapitializing of the fleet was the only path to assure combatant commanders mission success.

KC-135 Background

In 1954 the Air Force initiated the KC-135 Air Refueling program to replace its aging fleet of WWII-era KB-50 and Korean War-era KC-97 air refueling tankers. Between 1957 and 1965 over 700 C-135 and KC-135 aircraft were delivered. The peak delivery was 118 KC-135 aircraft in 1959. Today, the USAF is still maintaining and flying 544 of these aircraft. In addition, there are 59 KC-10s purchased in the early 1980s as an insurance policy against structural type failure within the KC-135 fleet. Today there are four models of KC-135s: R-models, E-models, D-models, and T-models. The D-models and E-models are 95% similar from a maintenance and sustainment position; therefore, they will be referred to as E-models. The R-models and T-models are also almost identical from a maintenance and sustainment position; therefore, they will be referred to as R-models. The R-models and E-models resulted from different modernization and re-engining programs initiated in the 1980s. There are 411 KC-135Rs that received new engines and changes to 25 other associated systems. The 133 KC-135Es were fitted with used commercial B-707 engines and pylon struts with 50-60 thousand hours of wear. Within the air refueling fleet, the KC-135E-models have experienced the most maintenance and corrosion problems and are more costly to maintain. With an average aircraft age of 43 years, the KC-135E fleet is the oldest combat weapon system in the Air Force inventory. It is also the oldest large fleet of heavy jet aircraft in aviation history.

Maintaining Aging KC-135s

Faced with the reality that all USAF aircraft type fleets are aging, Air Force Materiel Command established an Aging Aircraft Enterprise Office to assess, predict, and attempt to prevent the onset of age-related supportability issues. Aircraft life is measured three ways: 1) Usage--defined as flight hours; 2) Age--defined as corrosion and material degradation; and 3) Utility--defined as capabilities in the operating environment.

The first measurement is flight usage. For their first 30 years, the KC-135 supported the manned-bomber leg of the strategic Single Integrated Operations Plan (SIOP) and thus, during the prime of their life, the aircraft spent 30% of their time on nuclear alert and did not accrue high flight hours. Over time, the mission of the KC-135 has changed significantly to support global operations of all strike and cargo aircraft. Nonetheless, flight hours on KC-135 aircraft ‹ re relatively low compared to commercial airline standards. Generally, commercial airlines do not fly aircraft over 40 years old. To assess the impact of flying hours we perform Periodic Inspections similar to the scheduled A/B/C checks done by the commercial airlines.

The second critical measurement that defines aircraft life is physical age. In this fleet, corrosion is a function of age. Accurately predicting the extent of corrosion is difficult and this lack of predictability severely limits the ability to efficiently sustain aging fleets. To help weapon systems in the future, USAF engineering and research facilities are currently developing new tools and techniques to predict and evaluate corrosion. In the meantime, the KC-135 is particularly challenging since its 1950s design, materials, and construction did not consider corrosion prevention measures. In order to maintain a viable weapon system, major inspections

are performed during PDM at our depot facilities to allow engineers access to evaluate aircraft condition.

The third measurement of aircraft life is utility (ability to accomplish the intended mission in the current operational environment). Aircraft must be constantly updated to reflect current technology, to be sustainable with currently available spares, to comply with mandated safety, environmental, and air traffic control requirements, to interface with other DoD systems and forces, and to effectively accomplish a validated mission within the current joint-warfighting framework. At some point, it becomes no longer economically feasible to continually modify and upgrade a weapon system to operate in the current environment.

The most critical KC-135 tanker metric is age, and the most pressing KC-135 problems are corrosion and stress corrosion cracking—both age related. Stress corrosion cracking is one of the most difficult structural failures to predict. One can only predict this type of failure by essentially "cutting" into the actual member and performing destructive inspection. These types of failures are largely unpredictable and as the aircraft ages, the number of material failures will also be unpredictable. Therefore, considerable conservatism is placed upon scheduled inspections and replacement frequencies. This in turn drives additional aircraft downtime and increased costs.

The KC-135 performed its air refueling and SIOP missions admirably over its 40-year history. It was designed to quickly provide thousands of gallons of jet fuel to strategic bombers like the - B-47, B-58, B-66 and B-52 through a "flying boom." However, its missions continue to evolve and grow as the US Air Force's requirements to project Global Power and Global Mobility have increased. The KC-135's ability to perform its global mission requires significant modifications. At no time in the life of the KC-135 have modifications been more prevalent.

Air Mobility Command just finished a ten-year modification upgrading the aircraft's compass, radar, and Global Positioning Systems. The requirement for additional upgrades continues. Global Air Traffic Management (GATM) and Large Aircraft Infrared Countermeasures (LAIRCM) modifications planned back-to-back will require aircraft to be removed from service (for at least 90 days) to provide these increased capabilities for the operating environment.

Additionally, maintenance issues and "technical surprises" also plague availability. Some examples of recent maintenance problems and costs include:

Stabilizer trim actuator: Approximately 40 percent of the fleet were grounded from September 1999 to February 2000 until overhauled actuators were installed. Investigation results recommended immediate and long-term action to correct the discrepancy and prevent future stabilizer failures. Long-term fixes totaled $50M, but initiation was delayed until FY03 due to budget constraints; $15M remains unfunded.

Fuel System: The fuel system is the largest driver of non-mission capable (NMC) aircraft in recent years. Fuel tank and fuel bladder leaks continually plague the warfighter. Between Jan 98 and Jun 02, the fleet averaged 120 fuel leak repairs per month utilizing 3, 245 man-hours per month at a cost of 41,050,000. Also, the original fuel tank "corrosion preventative" topcoat installed 40 years ago began to deteriorate causing fuel contamination and aircraft down time. Currently, 60-hour fuel filter inspections are conducted and if there is loose topcoat the fuel tanks are entered by maintenance personnel to remove loose topcoat. Technicians take 2,870 man-hours per month to scotch-brite scrub the fuel tanks to remove flaking material. Fuel tank leaks are also a major driver of NMC time.

In dealing with these maintenance issues over the last five years, the KC-135 E Mission Capable (MC) Rate has averaged 71.9 percent and the KC-135R MC Rate averaged 78.0 percent with the maintenance workload of the KC-135E consistently higher (FY03 E-model hours are approximately 10% higher) than the KC-135R.

Faced with continuing degradation from aging and newly emerging operational requirements, the USAF recognized that tanker fleet recapitalization is needed. Recapitalization of the KC-135 fleet (544 aircraft) will take between 30 and 40 years given current DoD and USAF budget projections and constraints. This 30 to 40 year effort is limited by a maximum affordable rate of between 15 and 18 aircraft per year. The net effect of this extended recapitalization process is that some of today's 43-year-old KC-135s may be maintained and operated until they are 70-80 years old. Given the irreversible annual increases in operations and maintenance costs and the annual decreases in combat availability, financial and operational options must be explored to maximize existing capability within existing fiscal and physical resources.

KC-135 Business Case Analysis

Earlier in my written testimony I mentioned that the USAF saw an annual depot price per aircraft grow by 18% compounded annually. This is based on a recently completed SecAF directed KC-135 Business Case Analysis (BCA) based on the FY04 President's Budget (PB) examining three scenarios for retirement of the KC-135Es. It compares cost savings and operational capabilities of three different retirement cases, and assesses cost capability tradeoffs.

The team reviewed the 2001 Economic Service Life Study results and accepted all but the PDM estimates, aircraft modifications, and military personnel estimates. The team chose to

update the original ESLS estimates for PDM based on trends drawn from FY91-04 depot unit sales prices, revise the military personnel estimates using FY04 PB submissions, update the modifications to reflect the PB04 position, and convert the ESLS constant-year dollars to then-year (TY) dollars.

Programmed Depot Maintenance

The ESLS PDM analysis assumed that PDM sales rate would grow in the future at one percent a year above inflation and that the work package man-hours would grow at approximately 2.5% per year. That rate is much lower than history indicates. The original ESLS model significantly underestimated the increases in the actual FY03 and projected FY04 sales prices. Therefore, the TRIG used a more realistic sales-price growth rate based on updated sales rates from FY91-FY04.

A more accurate PDM estimate was produced by first calculating an historic average unit sales price (USP) rate for the KC-135 fleet, then developing a PDM growth rate model for forecasting USP out to FY17, and finally, applying the forecast USP to the projected PDM inputs to estimate the PDM cost in the out years. The result of this analysis determined that the 40+ year old KC-135 fleet has experienced an 18% depot cost growth per aircraft over the last 14 years, from $0.8M per aircraft in FY91 to a projected $7.3M per aircraft in FY04!

Military Personnel and Aircraft Modifications

The team changed the ESLS projections to reflect military personnel changes and actual KC-135 aircraft modifications reflected in the FY04PB.

A review of the 2001 KC-135 ESLS estimates as a means of projecting future costs determined that retiring 68 KC-135Es instead of starting retirement in FY09 as was originally planned, will result in a $4.5B cost savings between now and FY17.

As critical as the major structural issues are, the engine strut corrosion problem is the most pressing problem. In 1982-1990, TF-33 engines and struts were removed from retired commercial 707 aircraft (with an average 60,000 flight hours) and, as an interim upgrade, installed on KC-135A aircraft (thus becoming a KC-135E aircraft). This action was taken pending the decision to perform the extensive re-engining effort required to convert them to KC-135Rs.

In 2000, severe corrosion was observed after the partial disassembly of 16 of these KC-135E engine struts during PDM at Boeing Aerospace Service Center (BASC). SPO/Boeing engineering estimated some struts at/near a zero margin of safety and developed an interim repair that must be performed no later than Sep 04 at a cost of $150K per aircraft. Until this is completed, the KC-135Es must operate under a flight restriction. This repair should allow the struts to fly up to 5 years until they must be replaced at a cost of $2.9M per aircraft.

The Air Force's position is that recapitalization needs to begin as soon as possible. This recapitalization should begin with the KC-135E, the oldest and least-capable tanker.

Conclusion

Ideally, the USAF would be able to maintain the entire KC-135 fleet to maximize refueling capability until a follow-on aircraft enters the inventory. However, in the budget-constrained environment of today, the USAF must determine if it is viable to retire the aging KC-135E models in order to save constrained funds for recapitalization. In the worst-case scenario, the USAF would continue to fund ever-increasing costs associated with an aging fleet with declining availability. Eventually the USAF would be forced to start retiring KC-135Es to stay within budget and would not have any funds left for recapitalization.

I appreciate the support provided by Congress and look forward to working with this Committee to best satisfy our warfighter needs in the future.

Thank you for the opportunity to provide this statement for the record.

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE COMMITTEE ON ARMED SERVICES

PROJECTION FORCES SUBCOMMITTEE

UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: Air Refueling Tanker Requirements and Status of Tanker Fleet

STATEMENT OF MAJ GEN ESSEX
Director, Plans and Programs
Headquarters Air Mobility Command

June 24, 2003

NOT FOR PUBLICATION UNTIL RELEASED

BY THE COMMITTEE ON ARMED SERVICES,

UNITED STATES HOUSE OF REPRESENTATIVES

Chairman Bartlett, Congressman Taylor and Members of the Subcommittee:

Thank you for the opportunity to appear before you today. General Zettler and I are proud to come before you to discuss the Air Force's aerial refueling requirements, the status of the KC-135 fleet, and our current plans and programs in the fiscal year 2004 budget request to upgrade and sustain the aerial refueling fleet. My testimony will discuss the tanker requirement and our current plans and programs in our 2004 budget request.

At an average age of over 40 years, the KC-135 fleet is the oldest combat weapon system in the United States Air Force (USAF). As this tanker fleet ages, ensuring warfighters have the required capability to perform their wartime mission is a growing challenge.

Tanker Requirements

The baseline requirement for the Air Force's contribution to air refueling is defined in the Tanker Requirements Study for Fiscal Year 2005 (TRS-05), completed February 2001. Air Mobility Command (AMC) conducted TRS-05 in partnership with the Office of the Secretary of Defense Program Analysis and Evaluation (OSD (PA&E)) division. The study was conducted to determine both aircraft and aircrew requirements in the near term.

The total requirement is based on mission roles and scenarios to support the National Military Strategy. The National Military Strategy during the timeframe of the study was based on supporting the prosecution of two nearly simultaneous Major Theater Wars (2 MTW).

Requirements were quantified for mixes of the following scenarios: Major Theater War scenarios in Southwest Asia (SWA) and Northeast Asia (NEA), the support of the Single

Integrated Operations Plan (SIOP), and President and SECDEF-directed Special Operations Forces missions. To prepare for a possible shift in the National Military Strategy, a Small Scale Contingency scenario was also included in this mix. The Major Theater War scenarios were those used in the Mobility Requirements Study for Fiscal Year 2005 (MRS-05). OSD and the Joint Staff initiated MRS-05 to examine the appropriate mix of end-to-end lift assets and their required support infrastructure needed to achieve the National Military Strategy. Although sizing tanker force structure was beyond the scope of the MRS-05, the study served as a major driver of tanker force structure requirements.

For many of these scenarios the requirement is predominantly based upon the two basic refueling missions carried out by tankers: the strategic mobility mission (deployment of combat and combat-support aircraft to theater) and the warfighting mission (employment of refueling assets to support strike aircraft on combat missions). Some tankers (KC-10s) were also used in the airlift role during periods of non-peak demand to augment airlift in MRS-05.

The Air Force refueling fleet is made up of KC-10A (59), KC-135E (133), and KC-135R (411) aircraft (FY02 fleet structure). In order to make an "apples-to-apples" comparison, a common metric is needed to describe the effectiveness of these various aircraft. TRS-05 and other tanker force structure studies discuss the air refueling requirement in terms of KC-135R-model equivalents. The conversion factors used to obtain these equivalencies are strongly based on offload capacity but also take into account tanker compatibility with receivers as well as boom demand of the warfight scenarios. Table 1 identifies these capabilities in R-model equivalents. Table 2 provides the air-refueling inventory in terms of R-model equivalents for the current tanker inventory.

Aircraft Type	Factor	Equivalent
1 KC-135R	1.00	100% of KC-135R
1 KC-135E	0.84	84% of KC-135R
1 KC-10A	1.95	195% of KC-135R

Table 1: R-Model Equivalencies

Aircraft Type	Total Aircraft	R-model Equivalents
KC-135R	411	411
KC-135E	133	112
KC-10A	59	115

Table 2: R-Model Equivalencies for current inventory

The results of TRS-05 identify a need for 500-600 R-equivalents "available" on a daily basis to meet the wartime requirement. "Available" is defined as aircraft not in a "school house' capacity or depot-possessed. TRS-05 assumes these "available" aircraft meet and maintain the AMC standard mission capable rate (MC Rate = 85%) during wartime, leaving 15% as non-mission capable (NMC). In terms of mission capable aircraft, the requirement ranges from 425 to 510 mission capable R-equivalents (600 x 85% = 510; 500 x 85% = 425). It is important to note that this is a wartime mission capability. Day-to-day peacetime maintenance management

practices often do not sustain a fleet wide MC Rate of 85%. Applying peacetime actual MC Rates does not accurately portray the wartime capability of the air refueling fleet.

Since TRS-05 was completed, the world has changed and so has the National Military Strategy. The new NMS changes from a 2 MTW approach to a 1-4-2-1 force-planning construct described below.

1 - Defend the United States (Homeland Defense)

4 - Deter aggression and coercion in four critical regions

2 - Swiftly defeat aggression in two overlapping major conflicts

1 - Upon President's direction, win decisively against one of the two major conflicts

A new mobility study to include air refueling requirements is needed to further refine the requirement to support this strategy. In the meantime, TRS-05 remains the most comprehensive and widely accepted analysis of current tanker requirements

Sortie Generation Capability

While TRS-05 defines the traditional air refueling requirement in terms of "Available KC-135R Equivalents," that metric does not fully capture the impact of the increased crew ratio (and the resulting higher sortie generation capability) found in the FY04 PB, which incorporates a reduction of 68 KC-135E aircraft. Although no defined tanker requirement exists at this time in terms of sortie capability and no absolute measure of sortie capability relative to a requirement is possible, the relative sortie capability loss between the various fleet options can be compared to illustrate the relative impact of the fleet reduction in conjunction with the crew ratio increase.

The analysis conducted used the Air Force Studies and Analyses Agency (AFSAA) Sortie Generation Model to fly the fleets represented by the current inventory and the FY04 PB 68 KC-135E reduction. The analysis compared the maximum wartime sortie generation capabilities of the current KC-135 fleet to that of the FY04PB position, which calls for a reduction of 68 KC-135E primary aircraft authorized (PAA). This analysis is important because simply examining aircraft tails or equivalents, discounts improvements in aircraft utilization created by increasing crew ratios and per aircraft maintenance manning.

The optimal crew ratio is one where the capability of the total crew force equals the capability of the aircraft fleet. Historically, the KC-135 crew ratios were set at 1.36 Active Duty and 1.27 Air Reserve Component (ARC) to perform the single integrated operations plan (SIOP) mission. Multiplying this ratio by the number of PAA gives a total crew force.

The Tanker Requirements Study (TRS-05) identified both a tanker aircraft and crew shortage. The TRS further recommended a 1.75 crew ratio for the KC-135. A lower crew ratio limits the capability of the fleet based on available aircrews. Increasing the crew ratio to approximately 1.75 balances aircraft and aircrew capabilities.

Results of Sortie Generation Model

For the FY04 PB position, the 68 KC-135E reduction, many aircrews are re-invested in the remaining tanker fleet, matching aircraft and aircrew capability. The Air Force will increase crew ratios for the remaining tankers as follows:

	FY03	FY06
AD	1.36	1.75
ANG	1.27	1.8

AFRC	1.27	1.5

In addition to retaining the crew force, maintenance per aircraft will also be increased to support higher utilization rates on the remaining aircraft. This minimizes the effects of retiring aircraft to the warfighter.

Current plans and programs in the FY04 budget request

The current plan and program in the FY04 PB request is to reduce the AF PAA inventory by 68 KC-135E models between FY04-06. Under the 68 KC-135E reduction, 61 KC-135Es are retired and 7 are transferred to flyable Backup Aircraft Inventory (BAI) reserve. 48 R-models will flow from the active duty fleet to backfill 48 retiring Air Reserve Component E-models. Additionally, the ARC will reduce by an additional 20 PAA (13 aircraft retire, 7 remain as BAI). The Total Force picture is a reduction of 68 PAA. In FY04, this equates to a reduction of 44 KC-135E aircraft; 37 PAA and 7 BAI. The impact of this reduction in aircraft to the capability of the tanker fleet will be mitigated by increasing the crew ratio from its current value of 1.36 to 1.75. Increasing the crew ratio results in a higher sortie generation capability.

In FY04 the Air Force will also continue with several modification and sustainment efforts to the KC-135 fleet, including the Global Air Traffic Management modification to the R-model fleet with planned completion in FY12.

The FY04 PB submission recognizes the USAF's requirement to fulfill their charge to organize, train, and equip the force-multiplying capability of air refueling for the combatant commanders. Faced with a thirty-year recapitalization process, upward spiraling annual maintenance/operations costs, and downwardly spiraling annual availability, the USAF has

assessed the cost and benefits of retiring the oldest, least capable air refueling tankers, and reallocating their aircrew and maintenance personnel to increase the availability of the remaining KC-135 fleet.

Conclusion

A decision to reduce 68 KC-135Es is a smart risk management step. Increasing maintenance costs and decreasing reliability and maintainability, in light of future expectations, have already reached the point where it no longer makes sense to continue investing limited resources to keep the oldest and least capable KC-135E tankers flying. Corrosion damage is driving bills that the USAF has not budgeted for and, in the end, would only be an interim fix. Reinvestment of resources generated by reducing the KC-135E fleet by 68 aircraft allows for increased crew ratio and flight hours on the remaining tankers. These changes give us higher utilization rates on the remaining fleet, mitigating the impacts of retiring aircraft.

I appreciate the support provided by Congress and look forward to working with this Committee to best satisfy our warfighter needs in the future.

Thank you for the opportunity to provide this statement for the record.

United States General Accounting Office

GAO

Testimony

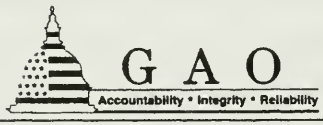
Before the Subcommittee on Projection Forces, Committee on Armed Services, House of Representatives

For Release on Delivery
Expected at 2:00 p.m. EDT
Tuesday, June 24, 2003

MILITARY AIRCRAFT

Information on Air Force Aerial Refueling Tankers

Statement of Neal P. Curtin, Director
Defense Capabilities and Management



GAO-03-938T

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June 24, 2003

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Highlights

Highlights of GAO-03-938T, a testimony before the Subcommittee on Projection Forces, Committee on Armed Services, House of Representatives

MILITARY AIRCRAFT

Information on Air Force Aerial Refueling Tankers

Why GAO Did This Study

Both the Congress and the Department of Defense are concerned about the age of the U.S. aerial refueling fleet and its potential impact on the military services' ability to meet operational requirements. Aerial refueling provides a key capability that is essential to the mobility of U.S. forces. At present, the Air Force is in the early stages of planning for modernizing its aging fleet.

In this testimony, GAO was asked to present its initial observations on

(1) the status of the KC-135 fleet, including its age, projected life limits, and mission capable rates (i.e., the percent of time on average that the aircraft are available to perform their assigned mission); and

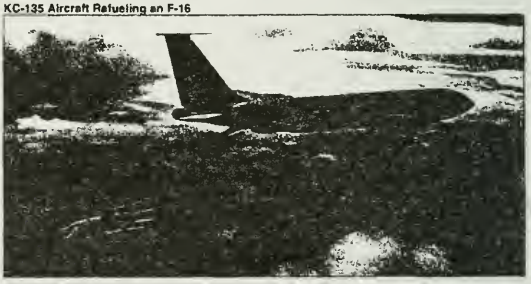
(2) Air Force aerial refueling requirements.

What GAO Found

The Air Force fleet of KC-135 aircraft (which, at 543 aircraft, represents the bulk of U.S. refueling capability) is an average of about 42 years in age. The Air Force projects that the KC-135 aircraft have between 36,000 and 39,000 lifetime flying hours; according to the Air Force, only a few KC-135s are projected to reach these limits before 2040, although at that time some of the aircraft would be close to 80 years old. KC-135s are being flown an average of about 435 hours per year, on average, since September 2001. As the fleet has aged, the aircraft have become expensive to maintain, averaging about $4.6 million per year in total operations and support costs for the least capable aircraft. Those costs include personnel, fuel, maintenance, and spare parts. KC-135s in the active duty forces are generally meeting the 85 percent goal for mission capable rates; rates were lower for aircraft in the reserve forces, ranging from 70 to 78 percent. The Air Force Reserve and Air National Guard operate over half of the KC-135s.

In a 1996 report, GAO pointed out that the aging fleet of KC-135s would eventually need replacement and that the Department of Defense needed to start planning for the recapitalization of the fleet. At that time, the Department responded to our report saying that the current fleet would meet requirements "for the foreseeable future" and planned to begin procurement of new tankers around fiscal year 2013. In 2000, the Air Force conducted a study called the Tanker Requirements Study-05, but it was never formally completed. Therefore, DOD does not have a current, validated study on which to base the size and composition of either the current fleet or a future aerial refueling force. There is no effort currently under way to update the Air Force study or to conduct an analysis of alternatives for tanker modernization. The Air Force indicated recently that it plans to conduct a new Tanker Requirements Study in the fiscal year 2004-2006 time frame.

KC-135 Aircraft Refueling an F-16



Source: U.S. Air Force

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To view the full product, including the scope and methodology, click on the link above. For more information, contact Neal P. Curtin, (202) 512-4914 or curtinn@gao.gov.

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to appear before you today to discuss the important subject of aerial refueling for military aircraft. Aerial refueling provides a key capability in enhancing the mobility of U.S. forces. The Air Force is beginning planning for the modernization of its aging aircraft fleet.

As you requested, my statement focuses on the following issues:

- KC-135 fleet status, including mission capable rates, age, and projected life limits; and
- Air Force aerial refueling requirements, including GAO's observations and the results of GAO's 1996 Air Force air refueling study.

My statement is based on two published GAO reports[1] and on our on-going work for the Readiness Subcommittee of the House Armed Services Committee. Because of the relatively short notice for the hearing, I have kept my prepared statement short, focusing on some key issues that will help update you with basic background information on the tanker fleet, as your office had requested. As you know, DOD is in the final stages of negotiating a lease agreement with Boeing for 100 new 767 aircraft that will be modified for use as tanker aircraft and replace part of the current fleet. Because details of that agreement have not been made public or provided to us, I am not in a position today to discuss issues related to the lease.

Status of Aerial Refueling Fleet

While numerous military aircraft provide refueling services, the bulk of U.S. refueling capability lies in the Air Force fleet of 59 KC-10 and 543 KC-135 aircraft. These are large, long-range aircraft that have counterparts in the commercial airlines, but which have been modified to turn them into tankers. The KC-10 is based on the DC-10 aircraft, and the KC-135 is similar to the Boeing-707 airliner. The KC-10 aircraft are relatively young, averaging about 20 years in age. Consequently, much of the focus on modernization of the tanker fleet is centered on the KC-135s. These were built in the 1950s and 1960s, and now average about 42 years in age.

[1] U.S. General Accounting Office, *Air Force Aircraft: Preliminary Information on Air Force Tanker* Leasing, GAO-02-724R (Washington, D.C.: May 15, 2002) and *U.S. Combat Airpower: Aging Refueling Aircraft Are Costly to Maintain and Operate*, GAO/NSIAD-96-160 (Washington, D.C.: August 8, 1996).

Because of their large numbers, they are the mainstay of the refueling fleet, and successfully carrying out the refueling mission depends on the continued performance of the KC-135s. Thus, recapitalizing this fleet of KC-135s will be crucial to maintaining aerial refueling capability, and it will be a very expensive undertaking.

Let me provide some additional background information on the KC-135 fleet:

- There are two basic versions of aircraft, designated the KC-135E and KC-135R. The R model aircraft have been re-fitted with modern engines and other upgrades that give them an advantage over the E models. The E model aircraft on average are about 2 years older than the R models, and the R models provide more than 20 percent greater refueling capacity per aircraft.
- The E models are located in the Air National Guard and Air Force Reserve. Active forces have only R models. Over half the KC-135 fleet is located in the reserve component.
- While the KC-135 fleet averages over 40 years in age, the aircraft have relatively low levels of flying hours. The Air Force projects that E and R models have lifetime flying hours limits of 36,000 and 39,000 hours, respectively. According to the Air Force, only a few KC-135s would reach these limits before 2040, but at that time some of the aircraft would be about 80 years old.
- Flying hours for the KC-135s averaged about 300 hours per year between 1995 and September 2001. Since then, utilization is averaging about 435 hours per year.
- According to Air Force data, the KC-135 fleet had a total operation and support cost in fiscal year 2001 of about $2.2 billion. The older E model aircraft averaged total costs of about $4.6 million per aircraft, while the R models averaged about $3.7 million per aircraft. Those costs include personnel, fuel, maintenance, modifications, and spare parts.

By most indications, the fleet has performed very well during the past few years of high operational tempo. Operations in Kosovo, Afghanistan, Iraq, and here in the United States in support of Operation Noble Eagle were demanding, but the current fleet was able to meet the mission requirements. Approximately 150 KC-135s were deployed to the combat theater for Operation Allied Force in Kosovo, about 60 for Operation Enduring Freedom in Afghanistan, and about 150 for Operation Iraqi Freedom. Additional aircraft provided "air bridge" support for movement of fighter and transport aircraft to the combat theater, for some long-range bomber operations from the United States, and, at the same time, to help

maintain combat air patrols over major U.S. cities since September 11, 2001.

Data on the mission capable rates for the KC-135 fleet are shown in the following table. Mission capable rates measure the percent of time on average that the aircraft are available to perform their assigned mission. The goal for KC-135s is an 85 percent rate; the table shows the number of aircraft in the different components along with the mission capable rates for the period October 2001 through March 2002.

Table 1. Mission Capable Rates for KC-135 Aircraft

Component	Number of aircraft	Mission capable rate (percent)
Active	245	85
Reserve R models	52	78
National Guard R models	115	78
Reserve E models	18	70
National Guard E models	115	76

Source: Air Force data.

For comparison purposes, the KC-10 fleet is entirely in the active component, and the 59 KC-10s had an average mission capable rate during the same period of 81.2 percent.

The rest of the DOD refueling fleet consists of Air Force HC- and MC-130 aircraft used by special operations forces, Marine Corps KC-130 aircraft, and Navy F-18 and S-3 aircraft. However, the bulk of refueling for Marine and Navy aircraft comes from the Air Force KC-10s and KC-135s. These aircraft are capable of refueling Air Force and Navy/Marine aircraft, as well as some allied aircraft, although there are differences in the way the KC-10s and KC-135s are equipped to do this.

DOD's Tanker Requirements and GAO's 1996 Air Force Refueling Study

In our 1996 report, we pointed out that the aging fleet of KC-135s would eventually need replacement and that DOD needed to start planning for the recapitalization of the fleet. We recommended that DOD consider looking at dual-use aircraft—an aircraft that could be used as a tanker or as a cargo carrier, depending on mission requirements. The KC-10 fleet is actually used in this way now. In response to our recommendation, DOD agreed that it would consider such an option when it did a comprehensive analysis of tanker requirements and alternatives. However, the department also stated that the current fleet would meet requirements for "the

foreseeable future." Moreover, in its response to our report, DOD stated that "While the KC-135 is an average of 35 years old, its airframe hours and cycles are relatively low. With proper maintenance and upgrades, we believe the aircraft may be sustainable for another 35 years." At the time of our report, the Air Force had deferred the start of KC-135 replacement from fiscal year 2007 to 2013. In discussions with the Air Force last year, officials indicated that they had moved up that timetable to fiscal year 2009.

DOD does not have a current, validated study on which to base the size and composition of either the current fleet or a future aerial refueling force. An Air Force study called Tanker Requirements Study-05 (TRS-05) was conducted in 2000, but it was never formally completed nor were its preliminary results released. Drafts of the study identified a shortfall in tanker capability, but the study was based on the old strategy of supporting two major theater wars. There is no effort under way that we know of to update the TRS-05 study and release it or to conduct an analysis of alternatives for tanker modernization. The Air Force indicated recently that it planned to conduct a new Tanker Requirements Study in the fiscal year 2004-2006 time frame.

Mr. Chairman, this concludes my prepared statement. I would be happy to respond to any questions you or other Members of the Subcommittee may have at this time.

Contacts and Acknowledgments

For future contacts regarding this testimony, please contact me at (202) 512-4914 or Brian Lepore at (202) 512-4523. Individuals making key contributions to this testimony included Joseph J. Faley, Kenneth W. Newell, Tim F. Stone, and Susan K. Woodward.

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QUESTIONS AND ANSWERS SUBMITTED FOR THE RECORD

JUNE 24, 2003

QUESTIONS SUBMITTED BY MR. BARTLETT

Mr. BARTLETT. Is the Tanker Requirements Study going to be released?

General ESSEX. Yes, The Tanker Requirements Study 2005 (TRS–05) has been released. TRS–05 consists of a three page executive summary and approximately 80 classified slides with no associated report. This study has been delivered to the House Armed Services Committee and the Government Accounting Office is in possession of it as well.

Mr. BARTLETT. It is my understanding that the budget requested the conversions. Is that correct?

General ZETTLER. Yes, $124M was in the FY04 budget for reengining as was $89M in the FY03 budget. In both cases, these funds were not part of the AF submission however, they were added as part of the "Cost of War" funding during the budgetary process. These funds were to be used during the buildup of the Portland Reserve tanker unit. The AF does not deem reengining as a viable option for recapitalization.

Mr. BARTLETT. What are the current costs per flying hour for the KC–10s, 135–Es, and 135–Rs? Do you have those numbers?

General ZETTLER. The AFTOC data base is our data source to answer this QFR.

Tanker Operating and Support (O&S) Cost Comparison (TY$)

	FY99	FY00	FY01	FY02
KC–135 D/E				
Aircraft Quantity	138	138	135	133
Fly hours per aircraft	298	255	242	318
O&S Cost per Fly Hour*	$10,847	$11,922	$13,894	$13,679
KC–135 R/T				
Air Craft Quantity	408	408	411	411
Fly hours per aircraft	383	304	327	430
O&S Cost per Fly Hour*	$8,944	$10,198	$10,704	$10,367
KC–10A				
Aircraft Quantity	59	59	59	59
Fly hours per aircraft	887	812	757	1327
O&S Cost per Fly Hour*	$8,189	$8,782	$10,554	$8,182

NOTE: Flying hours per aircraft differ significantly among the three aircraft types. This has a major effect on the cost per flying hour comparison among these aircraft. Aircraft with higher flying hours tend to have lower costs per hour as the 'fixed' support costs get spread over more hours resulting in a lower rate.

This response provides KC–135 D/E, KC–135 R/T and KC–10A data comparing number of aircraft, average hours flown per aircraft, and average aircraft operating and support (O&S) costs per flight hour by year.

*The average O&S cost per fly hour is derived using the total historical actual O&S costs, aircraft quantity and hours flown collected in the Air Force Total Ownership Cost (AFTOC) database. O&S Cost per Fly Hour cost elements include personnel costs, unit level consumption, intermediate and depot maintenance, contractor support and indirect support.

Mr. BARTLETT. General Zettler, the media recently reported that a contract for reengining KC–135s that was signed by the Air Force subsequent to the announcement of the KC–767 lease agreement has been put on hold. Is that true?

General ZETTLER. The contract award and the USD(AT&L) announcement of the KC–767 lease actually occurred on the same day, 23 May 03.

The CFM International contract is a requirements type contract. It does not obligate the Air Force to procure a minimum quantity of CFM56–2B–1 engines per Fiscal Year (FY); however, it sets a ceiling on the number of these engines the Air Force can acquire each FY. Because of this flexible contract structure, it has not been necessary to put the CFM International contract on hold. The Air Force will be able to use this contract in the future, if requirements materialize, for the acquisition of CFM56–2B–1 engines for KC–135/RC–135 re-engining.

Mr. BARTLETT. Was there a contract signed by the Air Force with CFM International subsequent to the KC–767 lease agreement announcement?

General ZETTLER. No, the KC–135/RC–135 re-engining contract with CFM International was actually awarded the same day, 23 May 03, that the Under Secretary of Defense (Acquisition, Technology and Logistics) formally announced the Department's support of the proposed KC–767 lease contract award.

Mr. BARTLETT. Okay. And the next question: Has this contract been put on hold?

General ZETTLER. The CFM International contract is a requirements type contract. It does not obligate the Air Force to procure a minimum quantity of CFM56–2B–1 engines per Fiscal Year (FY); however, it sets a ceiling on the number of these engines the Air Force can acquire each FY. Because of this flexible contract structure, it has not been necessary to put the CFM International contract on hold. The Air Force will be able to use this contract in the future, if requirements materialize, for the acquisition of CFM56–2B–1 engines for KC–135/RC–135 re-engining. At this time, the Air Force does not anticipate further requirements for re-engining KC–135 aircraft.

One order has been placed to date under this contract. It was in support of RC–135, not KC–135, requirements.

Mr. BARTLETT. And also, you might provide for the record what the amount of termination liability is for this contract. What will this cost us to not go through with that?

General ZETTLER. The KC–135/RC–135 re-engining contract with CFM International is a requirements type contract. To date, no orders have been placed against that contract for KC–135 requirements. Further, the Air Force has no contractual obligation to place any minimum quantity orders for the KC–135. Therefore, there is no KC–135 related termination liability at this time under that contract. One order has been placed to date for RC–135 requirements, and, hence, there is termination liability associated with that.

QUESTIONS SUBMITTED BY MR. KLINE

Mr. KLINE. Please describe and compare the maintenance hours per flight hour required for the KC–135R, KC–135E, and KC–10 airframes and the expected benefits of the proposed retirement of some KC–135E aircraft. How will the maintenance hours per flight hour differ with a Boeing 767 tanker?

General ZETTLER. In FY02, the KC–10 on-equipment maintenance man-hour/flying hour (MMH/FH) rate was 3.8 hours. The KC–135E rate for FY02 was 15.9 hours, and the KC–135R rate was 8.78 hours.

By retiring some of the KC–135E aircraft, the Air Force plans to maintain the manpower and flying hours associated with the retired aircraft. This increase in the ratio of personnel to tails will allow the Air Force to increase the utilization of the remaining KC–135s. Spreading the additional flight hours across the entire KC–135 fleet will minimize the increased tempo on the remaining aircraft.

The Air Force intends to fly the KC–767 approximately 750 hours per aircraft per year. The AF expects the MMH/FH to be much lower on the KC–767 than the KC–135 rate. Since the Air Force doesn't currently operate any KC–767s we don't have any historic maintenance man-hour per flying hour data.

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